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THERE are few persons, among what may be called the travelling class, who know the beauty of the finest American country seats. Many are ignorant of the very existence of those rural gems that embroider the landscape here and there, in the older and wealthier parts of the country. Held in the retirement of private life, they are rarely visited, except by those who enjoy the friendship of their possessors. The annual tourist by the railroad and steamboat, who moves through wood and meadow and river and hill, with the celerity of a rocket, and then fancies he knows the country, is in a state of total ignorance of their many attractions; and those whose taste has not led them to seek this species of pleasure, are equally unconscious of the landscape-gardening beauties that are developing themselves every day, with the advancing prosperity of the country.

It has been our good fortune to know a great number of the finest of these delightful residences, to revel in their beauties, and occasionally to chronicle their charms. If we have not sooner spoken at large of MONTGOMERY PLACE, second as it is to no seat in America, for its combination of attractions, it has been rather that we were silent—like a devout gazer at the marvellous beauty of the Apollo—from excess of enjoyment, than from not deeply feeling all its varied mysteries of pleasure-grounds and lawns, wood and water.

MONTGOMERY PLACE is one of the superb old seats belonging to the LIVINGSTON family, and situated in that part of Dutchess county bordering on the Hudson. About one hundred miles from New-York, the swift river steamers reach this part of the river in six hours; and the guest, who leaves the noisy din of the town in the early morning, finds himself, at a little past noon, plunged amid all the seclusion and quiet of its leafy groves.

And this *accessible* perfect seclusion is, perhaps, one of the most captivating features in the life of the country gentleman, whose lot is cast on this part of the Hudson. For twenty miles here, on the eastern shore, the banks are nearly a continuous succession of fine seats. The landings are by no means towns, or large villages, with the busy air of trade, but quiet stopping places, serving the convenience of the neighboring residents. Surrounded by extensive pleasure grounds, fine woods or parks, even the adjoining estates are often concealed from that part of the grounds around the house, and but for the broad Hudson, which forms

the grand feature in all these varied landscapes—the Hudson always so full of life in its numberless bright sails and steamers—one might fancy himself a thousand miles from all crowded and busy haunts of men.

Around MONTGOMERY PLACE, indeed, this air of quiet and seclusion lurks more bewitchingly than in any other seat whose hospitality we have enjoyed. Whether the charm lies in the deep and mysterious wood, full of the echo of water spirits, that forms the northern boundary, or whether it grows out of a profound feeling of completeness and perfection in foregrounds of old trees, and distances of calm serene mountains, we have not been able to divine; but certain it is that there is a spell in the very air, which is fatal to the energies of a great speculation. It is not, we are sure, the spot for a man to plan campaigns of conquest, and we doubt even whether the scholar, whose ambition it is

> "To scorn delights,
> And live laborious days,"

would not find something in the air of this demesne, so soothing as to dampen the fire of his great purposes, and dispose him to believe that there is more dignity in repose, than merit in action.

There is not wanting something of the charm of historical association here. The estate derives its name from GEN. MONTGOMERY, the hero and martyr of Quebec, (whose portrait, among other fine family pictures, adorns the walls of the mansion.) MRS. MONTGOMERY, after his lamented death on the heights of Abraham, resided here during the remainder of her life. At her death, she bequeathed it to her brother, the Hon. EDWARD LIVINGSTON, our late minister to France. Here this distinguished diplomatist and jurist passed, in elegant retirement, the leisure intervals of a life largely devoted to the service of the state, and here still reside his family, whose greatest pleasure seems to be to add, if possible, every year, some admirable improvement, or elicit some new charm of its extraordinary natural beauty.

The age of MONTGOMERY PLACE heightens its interest in no ordinary degree. Its richness of foliage, both in natural wood and planted trees, is one of its marked features. Indeed, so great is the variety and intricacy of scenery, caused by the leafy woods, thickets and bosquets, that one may pass days and even weeks here, and not thoroughly explore all its fine points—

> "Milles arbres, de ces lieux ondoyante parure
> Charme de l'odorat, de gout et des regards,
> Elégamment groupés, négligemment épars,
> Se fuyaient, s'approchaient, quelquefois à la vue
> Ouvraient dans la lointain un scène imprévue;
> Ou, tombant jusqu'à terre, et recourbant leurs bras
> Venaient d'un doux obstacle embarrasser leurs pas;
> Ou pendaient sur leur tête en festons de verdure,
> Et de fleurs, en passant, semaient leur chevelure.
> Dirai-je ces forêts d'arbustes, d'arbrisseaux,
> Entrelaçant en voûte, en alcove, en berceaux,
> Leurs bras voluptueux, et leurs tiges fleuries?"

About four hundred acres comprise the estate called MONTGOMERY PLACE, a very large part of which is devoted to pleasure grounds and ornamental purposes. The ever varied surface affords the finest scope for the numerous roads, drives, and walks, with which it abounds. Even its natural boundaries are admirable. On the west is the Hudson, broken by islands into an outline unusually varied and picturesque. On the north, it is separated from BLITHEWOOD, the adjoining seat, by a wooded valley, in the depths of which runs a broad stream, rich in waterfalls. On the south is a rich oak wood, in the centre of which is a private drive. On the east it touches the post road. Here is the entrance gate, and from it leads a long and stately avenue of trees, like the approach to an old French chateau. Half-

way up its length, the lines of planted trees give place to a tall wood, and this again is succeeded by the lawn, which opens in all its stately dignity, with increased effect, after the deeper shadows of this vestibule-like wood. The eye is now caught at once by the fine specimens of Hemlock, Lime, Ash and Fir, whose proud heads and large trunks form the finest possible accessories to a large and spacious mansion, which is one of the best specimens of our manor houses. Built many years ago, in the most substantial manner, the edifice has been retouched and somewhat enlarged within a few years, and is at present both commodious, and architectural in character.

Without going into any details of the interior, we may call attention to the unique effect of the *pavilion*, thirty feet wide, which forms the north wing of this house. It opens from the library and drawing-room by low windows. Its ribbed roof is supported by a tasteful series of columns and arches, in the style of an Italian arcade. As it is on the north side of the dwelling, its position is always cool in summer; and this coolness is still farther increased by the abundant shade of tall old trees, whose heads cast a pleasant gloom, while their tall trunks allow the eye to feast on the rich landscape spread around it. (See *Frontispiece.*)

To attempt to describe the scenery, which bewitches the eye, as it wanders over the wide expanse to the west from this pavilion, would be but an idle effort to make words express what even the pencil of the painter often fails to copy. As a foreground, imagine a large lawn waving in undulations of soft verdure, varied with fine groups, and margined with rich belts of foliage. Its base is washed by the river, which is here a broad sheet of water lying like a long lake beneath the eye. Wooded banks stretch along its margin. Its bosom is studded with islands, which are set like emeralds on its pale blue bosom. On the opposite shores, more than a mile distant, is seen a rich mingling of woods and cornfields. But the crowning glory of the landscape is the background of mountains. The Kaatskills, as seen from this part of the Hudson, are, it seems to us, more beautiful than any mountain scenery in the middle States. It is not merely that their outline is bold, and that the summit of Roundtop, rising 3000 feet above the surrounding country, gives an air of more grandeur than is usually seen, even in the Highlands; but it is the *colour* which renders the Kaatskills so captivating a feature in the landscape here. Never harsh or cold, like some of our finest hills, nature seems to delight in casting a veil of the softest azure over these mountains—immortalized by the historian of Rip Van Winkle. Morning and noon, the shade only varies from softer to deeper blue. But the hour of sunset is the magical time for the fantasies of the colour-genii of these mountains. Seen at this period, from the terrace or the pavilion of MONTGOMERY PLACE, the eye is filled with wonder at the various dyes that bathe the receding hills—the most distant of which are twenty or thirty miles away. Azure, purple, violet, pale grayish-lilac, and the dim hazy hue of the most distant cloud-rift, are all seen, distinct, yet blending magically into each other in these receding hills. It is a spectacle of rare beauty, and he who loves tones of colour, soft and dreamy as one of the mystical airs of a German maéstro, should see the sunset fade into twilight from the seats on this part of the Hudson.

THE MORNING WALK.

Leaving the terrace on the western front, the steps of the visitor, exploring MONTGOMERY PLACE, are naturally directed towards

the river bank. A path on the left of the broad lawn leads one to the fanciful rustic-gabled seat, among a growth of locusts at the bottom of the slope. Here commences a long walk, which is the favorite morning ramble of guests. Deeply shaded, winding along the thickly wooded bank, with the refreshing sound of the tide-waves gently dashing against the rocky shores below, or expending themselves on the beach of gray gravel, it curves along the bank for a great distance. Sometimes overhanging cliffs, crested with pines, frown darkly over it; sometimes thick tufts of fern and mossy-carpeted rocks border it, while at various points, vistas or long reaches of the beautiful river scenery burst upon the eye. Half-way along this morning ramble, a rustic seat, placed on a bold little plateau, at the base of a large tree, eighty feet above the water, and fenced about with a rustic barrier, invites you to linger and gaze at the fascinating river landscape here presented. It embraces the distant mountains, a sylvan foreground, and the broad river stretching away for miles, sprinkled with white sails. The *coup-d'œil* is heightened by its being seen through a dark framework of thick leaves and branches, which open here just sufficiently to show as much as the eye can enjoy or revel in, without change of position.

A little farther on, we reach a flight of rocky steps, leading up to the border of the lawn. At the top of these is a rustic seat with a thatched canopy, curiously built round the trunk of an aged pine.

Passing these steps, the morning walk begins to descend more rapidly toward the river. At the distance of some hundred yards, we find ourselves on the river shore, and on a pretty jutting point of land stands a little *rustic pavilion*, from which a much lower and wider view of the landscape is again enjoyed. Here you find a boat ready for an excursion, if the spirit leads you to reverse the scenery, and behold the the leafy banks from the water.

THE WILDERNESS.

Leaving the morning walk, we enter at once into "The Wilderness." This is a large and long wooded valley. It is broad, and much varied in surface, swelling into deep ravines, and spreading into wide hollows. In its lowest depths runs a large stream of water, that has, in portions, all the volume and swiftness of a mountain torrent. But the peculiarity of "The Wilderness," is in the depth and massiveness of its foliage. It is covered with the native growth of trees, thick, dark and shadowy, so that once plunged in its recesses, you can easily imagine yourself in the depths of an old forest, far away from the haunts of civilization. Here and there, rich thickets of the Kalmia or native Laurel clothe the surface of the ground, and form the richest underwood.

But the Wilderness is by no means savage in the aspect of its beauty; on the contrary, here as elsewhere in this demesne, are evidences, in every improvement, of a fine appreciation of the natural charms of the locality. The whole of this richly wooded valley is threaded with walks, ingeniously and naturally conducted so as to penetrate to all the most interesting points; while a great variety of rustic seats, formed beneath the trees, in deep secluded thickets, by the side of the swift rushing stream, or on some inviting eminence, enables one fully to enjoy them.

There are a couple of miles of these walks, and from the depth and thickness of the wood, and the varied surface of the ground, their intricacy is such that only the family, or those very familiar with their course, are at all able to follow them all with

Fig. 26. *Rustic Seat.*

any thing like positive certainty as to their destination. Though we have threaded them several seasons, yet our late visit to Montgomery Place found us giving ourselves up to the pleasing perplexity of choosing one at random, and trusting to a lucky guess to bring us out of the wood at the desired point.

Not long after leaving the *rustic pavilion*, on descending by one of the paths that diverges to the left, we reach a charming little covered resting place, in the form of a rustic porch. The roof is prettily thatched with thick green moss. Nestling under a dark canopy of evergreens in the shelter of a rocky fern-covered bank, an hour or two may be whiled away within it, almost unconscious of the passage of time.

THE CATARACT.

But the stranger who enters the depths of this dusky wood by this route, is not long inclined to remain here. His imagination is excited by the not very distant sound of waterfalls.

"Above, below, aërial murmurs swell,
From hanging wood, brown heath and bushy dell;
A thousand gushing rills that shun the light,
Stealing like music on the ear of night."

He takes another path, passes by an airy looking rustic bridge, and plunging for a moment into the thicket, emerges again in full view of the first cataract. Coming from the solemn depths of the wood, he is astonished at the noise and volume of the stream, which here rushes in wild foam and confusion over a rocky fall, forty feet in depth. Ascending a flight of steps made in the precipitous banks of the stream, we have another view, which is scarcely less spirited and picturesque.

This waterfall, beautiful at all seasons, would alone be considered a sufficient attraction to give notoriety to a rural locality in most country neighborhoods. But as if nature had intended to lavish her gifts here, she has, in the course of this valley, given two other cataracts. These are all striking enough to be worthy of the pencil of the artist, and they make this valley a feast of wonders to the lovers of the picturesque.

There is a secret charm which binds us to these haunts of the water spirits. The spot is filled with the music of the falling water. Its echoes pervade the air, and beget a kind of dreamy revery. The memory of the world's toil gradually becomes fainter and fainter, under the spell of the soothing monotone; until at last one begins to doubt the existence of towns and cities, full of busy fellow beings, and to fancy the true happiness of life lies in a more simple existence, where man, the dreamy silence of thick forests, the lulling tones of babbling brooks, and the whole heart of nature, make one sensation, full of quiet harmony and joy.

THE LAKE.

That shadowy path, that steals away so enticingly from the neighborhood of the cataract, leads to a spot of equal, though a different kind of loveliness. Leaving the

Fig. 27. *The Lake.*

border of the stream, and following it past one or two distracting points, where other paths, starting out at various angles, seem provokingly to tempt one away from the neighborhood of the water, we suddenly behold, with a feeling of delight, THE LAKE.

Nothing can have a more charming effect than this natural mirror in the bosom of the valley. It is a fine expansion of the same stream, which farther down forms the large cataract. Here it sleeps, as lazily and glassily as if quite incapable of aught but reflecting the beauty of the blue sky, and the snowy clouds, that float over it. On two sides, it is overhung and deeply shaded by the bowery thickets of the surrounding wilderness; on the third is a peninsula, fringed with the graceful willow, and rendered more attractive by a *rustic temple;* while the fourth side is more sunny and open, and permits a peep at the distant azure mountain tops.

This part of the grounds is seen to the most advantage, either toward evening, or in moonlight. Then the effect of contrast in light and shadow is most striking, and the seclusion and beauty of the spot are more fully enjoyed than at any other hour. Then you will most certainly be tempted to leave the curious rustic seat, with its roof wrapped round with a rude entablature like Pluto's crown; and you will take a seat in *Psyche's boat*, on whose prow is poised a giant butterfly, that looks so mysteriously down into the depths below as to impress you with a belief that it is the metempsychosis of the spirit of the place, guarding against all unhallowed violation of its purity and solitude.

The peninsula, on the north of the lake, is carpeted with the dry leaves of the thick cedars that cover it, and form so umbrageous a resting place that the sky over it seems absolutely dusky at noon day. On its northern bank is a rude sofa, formed entirely of stone. Here you linger again, to wonder afresh at the novelty and beauty of the *second cascade.* The stream here emerges from a dark thicket, falls about twenty feet, and then rushes away on the side of the peninsula opposite the lake. Although only separated by a short walk and the mass of cedars on the promontory, from the lake itself, yet one cannot be seen from the other; and the lake, so full of the very spirit of

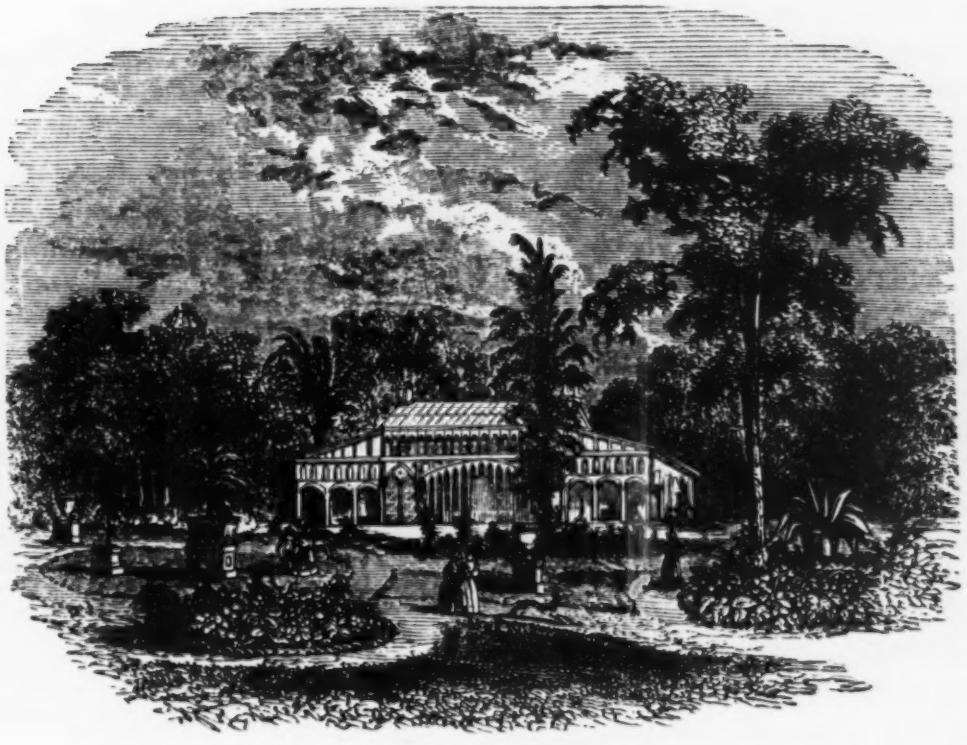

Fig. 28. *The Conservatory.*

repose, is a perfect opposite to this foaming, noisy little waterfall.

Farther up the stream, is another cascade, but leaving that for the present, let us now select a path leading, as near as we can judge, in the direction of the open pleasure grounds near the house. Winding along the sides of the valley, and stretching for a good distance across its broadest part, all the while so deeply immersed, however, in its umbrageous shelter, as scarcely to see the sun, or indeed to feel very certain of our whereabouts, we emerge in the neighborhood of the CONSERVATORY.

This is a large, isolated, glazed structure, designed by Mr. CATHERWOOD, to add to the scenic effect of the pleasure grounds. On its northern side are, in summer, arranged the more delicate green-house plants; and in front are groups of large Oranges, Lemons, Citrons, Cape Jasmines, Eugenias, etc., in tubs—plants remarkable for their size and beauty. Passing under neat and tasteful archways of wirework, covered with rare climbers, we enter what is properly

THE FLOWER GARDEN.

How different a scene from the deep sequestered shadows of the Wilderness! Here all is gay and smiling. Bright parterres of brilliant flowers bask in the full daylight, and rich masses of colour seem to revel in the sunshine. The walks are fancifully laid out, so as to form a tasteful whole; the beds are surrounded by low edgings of turf or box, and the whole looks like some rich oriental pattern or carpet of embroidery. In the centre of the garden stands a large vase of the Warwick pattern; others occupy the centres of parterres in the midst of its two main divisions, and at either end is a fanciful light summer-house, or pavilion, of Moresque character. The whole garden is surrounded and shut out from the lawn, by a belt of shrubbery, and above and behind this, rises, like a noble framework, the background of trees of the lawn and the Wil-

derness. If there is any prettier flower-garden scene than this *ensemble* in the country, we have not yet had the good fortune to behold it.

It must be an industrious sight-seer who could accomplish more than we have here indicated of the beauties of this residence, in a day. Indeed there is enough of exercise for the body, and enjoyment for the senses in it, for a week. But another morning may be most agreeably passed in a portion of the estate quite apart from that which has met the eye from any point yet examined. This is

THE DRIVE.

On the southern boundary is an oak wood of about fifty acres. It is totally different in character from the Wilderness on the north, and is a nearly level or slightly undulating surface, well covered with fine Oak, Chestnut, and other timber trees. Through it is laid out the DRIVE; a sylvan route as agreeable for exercise in the carriage, or on horseback, as the "Wilderness," or the "Morning Walk," is for a ramble on foot. It adds no small additional charm to a country place in the eyes of many persons, this secluded and perfectly private drive, entirely within its own limits.

Though MONTGOMERY PLACE itself is old, yet a spirit ever new directs the improvements carried on within it. Among those more worthy of note, we gladly mention an *arboretum*, just commenced on a fine site in the pleasure grounds, set apart and thoroughly prepared for the purpose. Here a scientific arrangement of all the most beautiful hardy trees and shrubs, will interest the student, who looks upon the vegetable kingdom with a more curious eye than the ordinary observer.

The whole extent of the private roads and walks, within the precincts of MONTGOMERY PLACE, is between *five and six miles*. The remarkably natural beauty which it embraces, has been elicited and heightened everywhere, in a tasteful and judicious manner. There are numberless lessons here for the landscape gardener; there are an hundred points that will delight the artist; there are meditative walks and a thousand suggestive aspects of nature for the poet; and the man of the world, engaged in a feverish pursuit of its gold and its glitter, may here taste something of the beauty and refinement of rural life in its highest aspect, and be able afterwards understandingly to wish that

"One fair asylum from the world *he* knew,
One chosen seat, that charms with various view.
Who boasts of more, (believe the serious strain,)
Sighs for a home, and sighs, alas! in vain.
Thro' each he roves, the tenant of a day,
And with the swallow wings the year away."

ROGERS.

STARTING BUDS TOO SOON.—A correspondent in the Genesee Farmer thinks he has made a discovery, by the accidental breaking off of the stock just above the inserted bud, which caused the bud to grow immediately. He will probably discover next spring that the winter has totally killed the shoot, if it is a peach, apricot or nectarine; and by the end of another summer, that he has gained nothing in growth, if hardy like the apple, a few inches growth this year, rather stunting than accelerating the growth.

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PROFITS OF FRUIT.—P. BARRY, of the Genesee Farmer, says, that when in the garden of GEO. HOADLEY, Esq. of Cleveland, the present season, the crop of a single cherry tree was sold for $10. The tree was eleven years old, and not larger than seven year planted trees at Rochester.

THE CULTIVATION AND PROPAGATION OF AZALEAS.

BY DR. WM. W. VALK, FLUSHING, L. I.

DEAR SIR—In the June number of "*Flore des Serres et des Jardins de l'Europe*," (which as usual contains ten exquisite plates,) there is an admirable article by M. LOUIS VAN HOUTTE, the editor, with the above title. As I think it cannot fail to be interesting to your numerous readers, I send you a translation. It is not always easy to give the exact sense in rendering horticultural subjects, and to this cause must be attributed such peculiarities of expression as the reader may notice.

Azaleas, regarded as ornamental plants, like Rhododendrons, Camellias, and even as Roses, have acquired no little horticultural importance. Therefore, I believe amateurs will be pleased to have me enter into the relative details of the method of cultivation which is best suited to them.

Soil.—They succeed best in a light compost, rich in humus, formed of a mixture of equal parts of leaf-mould, well rotted, and sandy heath-earth. This compost is renewed as often as the growth of the plants appear to demand it.

Potting.—Usually they are planted in well drained pots, to avoid the stagnation of the rain, or the watering, which occurrence is fatal to the health of Azaleas. Pots with straight sides, present a natural obstacle to this stagnation; the delicate root fibres have more freedom, and are less obnoxious to dampness; on the other hand, the pots must be changed when the fibres collect at the bottom.

Exposure.—The green-house should face the east or south, though the north is better; and it ought to be perfectly airy.

Putting out.—In the beginning of June, or when the spring has fairly opened, all the Azaleas are put out, placing them behind a live hedge in steps, (or shelves,) and facing the morning sun. The pots are plunged, and a piece of tile or slate placed beneath them, to prevent the entrance of earth-worms. Here they are freely watered overhead and at the roots (in the evening) during hot weather, and while they continue growing. When growth has ceased, the supply of water is diminished; the soil is then to be kept only damp, and if the weather is wet, all watering must be withheld, at the time of housing them.

Their summer quarters should be as warm and light as possible, without exposure to the direct rays of the sun. On the other hand, too much shade causes them to grow weak, and to form very few flower buds. The essential point is to give them a just medium between shade and sunshine.

Putting them in.—Towards the last of September or beginning of October, Azaleas must be housed. The nights are then chilly and the white frosts dangerous. While the weather is fine, they should be cut into a proper shape, having already had time to form new shoots and flower buds. When removed from the ground, the pots should be washed, (neatness is the charm of green-houses,) and the plants arranged in the most convenient manner on the staging of the house.

Warmth.—The best method is by the *thermosiphon*, (a peculiar mode of heating by hot water,) but the fire should not be ignited until the thermometer indicates 0 of Reaumur (the freezing point.) Azaleas are not injured by cold at 2 R., and even —2, but a relative heat that will set the sap in motion is highly injurious, and causes them

to be weak and etiolated. Heat is not required except it be to remove dampness, resulting from the atmosphere, (as fogs, long rains, or to dissipate a slight frost, carefully regulating the temperature, that it goes not above 38 or 40 degrees Fahrenheit; more heat would be detrimental. When the weather allows, the sashes and doors of the house should be opened, particularly when the sun shines, an occurrence very rare in our climate (Belgium) during the winter. This should be especially attended to when there is no frost.

Pruning.—After Azaleas have made their growth, they should be tied up neatly to give a better effect to their flowers. Cut off all flaring branches just at the old wood. It is at this period that a general repotting is recommended, to secure a proper refreshing of the roots. The application of a generous and new soil invigorates the radicles, the plants soon cover themselves with fresh leaves and a profusion of flower buds, recompensing for the care which has been given them.

Some Azaleas are naturally dwarf, therefore these bear very little pruning; such are *A. indica lateritia*, *variegata*, *gledstanesii*, and they require a little more heat than the others. In consequence of this, keep them in a warm green-house, or give them the warmest places in a cold one.

Diseases of Azaleas.—In vegetable life, there are but few other diseases than *caries* (rottenness of the roots,) *chlorosis* (jaundice,) and the languor immediately preceding death. The first and second are caused by an excess of water either from rain or artificially. If the disease has not progressed too far, the remedy will be found in a removal of the cause producing it, and by a partial or entire repotting, then keeping the plants in the shade or under a frame. An *excess of dryness* becomes a prominent cause of languor, and is in many cases difficult to remove. Here water must be used with the greatest caution, for it is almost sure to kill. If the dry state has been prolonged, repot the plant in fresh earth, cut it in moderately, and keep it from the influence of the external atmosphere. Kept too warm, Azaleas are attacked by the Red Spider, (*Acarus*,) which will soon increase and kill the plant by exhausting its juices, if the leaves are not washed with care, from time to time, and frequently syringed, an operation indispensable, and alike applicable to plants in perfect health.

Azaleas in Rooms.—It is not at all surprising that plants with such splendid and brilliant flowers, should have gained access to salons and palaces. But these golden ceilings, (lambris dorés) are fatal to them, if the master's eye is not vigilant in continuing the habitual cares of the gardener! Therefore the rooms should be aired as much as possible through the day; at all events, the Azaleas should be placed near the windows, and carefully watered so as to preserve their foliage and flowers fresh. As soon as the amateur perceives the least ailment in the Azaleas which decorate his rooms, although the flowering be not done, he should, from interest, as well as for the preservation of his plants, send them to the common physician, (médecin ordinaire,) that is to say the gardener.

Such are, *grosse mode*, the general cares, required for the preservation and raising of Azaleas. The places of exposure and relative difference of climate, must necessarily be regulated by the changes of temperature, still based upon the suggestions of my experience and that of most practical cultivators. These modifications are, of course, appreciable to the sagacity and vigilance of amateurs, where the climate is different from that of Belgium or the north of France

THE PROPAGATION OF AZALEAS.

The instruction which I have presumed to offer on the subject of the Azaleas of India, for the benefit of young amateurs, (and only for them I write, not pretending to dictate to accomplished cultivators,) would not be at all complete, if I omitted the subjects of increase or propagation which best suits these plants. I shall be as brief as the nature of the subject permits, so as to be understood.

Grafting.—The modes of grafting most practised with Azaleas, are branch grafting, termed *à cheval*, *en fente*, or *en placage*. They are also grafted, but more rarely, *en approche*, by approach, or *par copulation*, (inarching,) the most frequently *en herbe*. (These terms may be thus translated, *à cheval*, saddle grafting; *en fente*, cleft grafting; *en placage*, veneer grafting; *en approche*, by approach; *en herbe*, herbaceous grafting, or when the wood is green.) The operation may be performed at any season, but the most favorable time is the latter part of May or beginning of June. The young shoots must have attained a certain maturity, a circumstance depending entirely on the temperature applied during the winter, whether cold or warm, and which necessarily advances or retards their growth. The grafted plants should be placed in a green-house, or under frames, whichever is preferred, and covered with a bell-glass, on slight hot-beds, or they may be kept very close until the perfect union of the parts, nor must any air be given them, until full vegetation is perceived.

The stocks best adapted to receive the grafts of the finest varieties, are in preference to other kinds, the *Azalea indica phenicea*, or the wild stock of the Azaleas of India, and if these cannot be had, the *Rhododendron ponticum*. I shall briefly give a description of the different methods of grafting practised. The grafting knife should be perfectly clean and sharp.

Grafting à cheval.—The graft is cut at its base in a prolonged acute angle. The stock cut at the head, receives the same angle in the opposite direction, that is an acute angle projecting.

Grafting en fente.—The graft is cut thin on both sides, at an acute angle, or lengthened wedge; the head of the stock is simply notched vertically (with dexterity and very slightly,) to receive the wedge of the graft.

Grafting en placage.—The graft and stock are notched vertically and squarely, each receiving equal notches, to permit them to join completely. This mode is to be preferred.

Inarching or Grafting par copulation.—The end of the stock is cut slopihg, that of the graft the same, very even, and in such a manner that the two portions will accurately fit one another.

Grafting en approche.—On the stock a vertical cut is made more or less deep, with a notch also of some depth, and a part of the head is cut off, so as to carry the sap into the graft. This is cut in the same manner precisely, quite as deep, but leaving the notch jutting out, so that the two parts can be perfectly joined. This method is but seldom used, because of its inconvenience, as it is necessary for the two plants to be side by side until union is effected, after which the two plants are separated by cutting off the stock.

Such are, in a few words, the different methods of increasing Azaleas by grafting. I may add, that the stock can be large without inconvenience, indeed this is usually the case; the different cuts should be made with great care and neatness, without being frayed, (*sans craillures*,) their surfaces very equal, so that they may be exactly ap-

plied to each other, and the wood and bark of the two portions be in perfect contact.

2. *Cuttings.*—Before the growth has completely ceased, that is near the end of June, the young shoots of the Azaleas are cut off about three inches in length, and well furnished with leaves; these make the cuttings. Some pans with large gravel at the bottom, and filled evenly with sandy heath-earth finely sifted, are to be in readiness for them. The end of each cutting is divided just at the base of a leaf-bud, and planted in quincunx, putting them in with a planting stick about three-fourths of an inch long, pressing the soil around them firmly with the end of the finger.

Thus planted, the pans are placed in a moderate hot-bed in the green-house, or better still, under a frame, and covering them with a bell-glass. I have used with advantage for my Azalea cuttings, small wooden boxes about two feet long, one foot wide, and five inches deep, (six including the bottom board,) which is pierced with holes for the drainage. I put at the bottom flint stones three-quarters of an inch in depth for drainage, and on these two inches of well sifted heath-earth. I then plant my cuttings, and cover the box with a plate of glass. This method, which I believe to have originated in my establishment, seems to me preferable to bell-glasses, because the small drops of water, caused by the exhalations of the cuttings, fix themselves on the glass, and fall back perpendicularly, thus moistening the earth equally, without running in furrows, as under bell-glasses, which soon decomposes the soil into a kind of mud. It will be sufficient to open the glass once a day, to avoid an excess of dampness, likely to be produced by these drops of water.

Potting them off.—As soon as the cuttings are well rooted, which you may know by their vegetation, prepare to pot them. Each cutting is planted separately in a small pot, in good heath-earth, simply sifted. They are then placed in a spent hot-bed, under a frame, which is better than bell-glasses, until they become a little more developed; then commence giving them air little by little, until they can bear it fully, repot them in larger pots, give plenty of air for six or eight months, after which treat them as old plants.

3. *Ring and Common Layering.*—I should not omit these two modes of increase, which are well known, but which are very little practised in propagating Azaleas. As it may be agreeable, however to the amateur to employ them, the operations are thus executed.

The first method is by raising to the height of the branches which are to be layered, small pots with a slit in the side, (to facilitate the introduction of the branches;) the opening is then closed with a small piece of glass cut to fit; the pots filled with heath-earth, and fixed securely, attaching them to their supports with small wire. Before this is done, however, a small ring of bark is cut from the branches, a little below the point where it enters the pot.

This operation is performed either in the open air or in the green-house, being careful to keep the soil in the pots a little damp. Three months will usually suffice to root the layers.

The second method requires the Azaleas to be planted in the open ground or under a shady frame, inclining the stem towards the soil. Handle the branches carefully and lightly so as not to break them, and bend them down at an acute angle. The part which is to be fixed in the soil is then cut horizontally and vertically, which permits its bending easily. It is then fixed in the earth with a small forked stick, and the

earth covered with a light layer of moss to keep up a proper degree of moisture. This method is much more expeditious than the former.

4. *Increase by Seed.*—At the commencement of autumn the seeds of Azaleas are fully ripe. They are then gathered, and subsequently sown in January or February. Fill some small pans, well drained, with finely sifted heath-earth, and press it lightly on the surface. The fine seeds are then sown evenly, without any other covering than a light coat of fine sand. Thus fixed, the pans are covered with glasses to keep in a little constant humidity, and placed on a hotbed under a frame, or in a cold or temperate green-house, in the shade, and as near the glass as possible.

The seeds quickly vegetate. As soon as the young plants have made one or two leaves (besides the seed leaves,) they must be transferred to other pans, leaving between them sufficient space for their further development. Give them a little heat to hasten and strengthen their shoots. Then as soon as they are four or five inches high, pot them singly in pots proportioned to their size. Continue the same temperature, giving a little air occasionally, so that they may become gradually accustomed to it, and then treat them as old plants.

Artificial Fecundation, or Hybridization.—By budding, grafting, and the two last methods of increase which I have just described, you propagate purely and simply the varieties or species which you possess. But then this handsome species would remain stationary, and soon its sameness would tire the most zealous amateur, if two other methods did not produce immense results, by creating a new and pleasing taste, quite natural for such elegant plants.

These are, by the seed and *artificial* fecundation, called also *hybridization.* I have already described the first, and will say a few words about the second.

Artificial fecundation or hybridization should only be practised between handsome varieties or species opposed in colour and form, to procure an intermediate progeny, or sometimes diametrically opposite. It requires sagacity, calculation and a sufficient knowledge of the subject, so as not to fail, or to create insignificant varieties, inferior to their parents. Thus you willingly cross the varieties with white flowers, with those that are red, the variegated with the one coloured, &c.

It is well known that artificial fecundation consists in the application of the pollen of one variety to the pistil of another. The precise moment is chosen of the opening of the anthers; cut away the whole flower, or only the female anthers, and rub them lightly on the top of the pistil (stigma) of that which has been cut, in such a manner that it may be perfectly daubed (barbouillée) with antheral powder. Before this operation another preparatory to it should be accomplished. It consists in cutting off the stamens at the moment the flowers expand, and before the opening of the anthers. Without this precaution, the fecundation would not succeed, or would not be perfect because of the admixture of the pollen.

It is in thus crossing the Azaleas of India, properly so called, with others, or with Rhododendrons, that we obtain those elegant varieties which have been so much admired, and which constitute the principal decoration of our green-houses in the spring of the year.

Wm. W. Valk, M. D.

Flushing, L. I., Aug. 1847.

CULTURE OF THE PEACH TREE.

BY A PENNSYLVANIAN.

Mr. Downing—As I deem the results of experiments in horticulture of more general interest than the promulgation of theories, I venture to send you some brief notes of my experience in the cultivation of the Peach tree.

In your most valuable standard work on Fruits, you have, I think, proved very plainly that the disease of the Peach tree, called the *Yellows*, is caused by bad cultivation in a light or poor soil. I am very well convinced that other maladies to which this fruit tree, is subject are the result of the same causes. It is the common and popular belief, that the Peach tree should always be planted in a light sandy soil; nay, that a thin sandy loam is the best for it. I suppose this opinion has arisen from the circumstance of the low price at which many tracts of land in New-Jersey, Delaware, and Maryland, can be turned into peach orchards, and that too *profitably*.

But it is well known, that there peach orchards are short-lived. From three to five years is their average duration, and most planters do not expect to get more than one or two crops of fruit from their trees. They then give them up as diseased or worn out, and plant new orchards.

It is well known, also, that such is not the natural duration of the Peach tree; that in the deep soil of the Ohio the trees bear and grow well from ten to twenty years; and the natural existence of the Peach tree in our climate, is at least a dozen years of fruitfulness.

What I gathered some years ago from this reasoning is, that we make a mistake in this part of the Union, when we plant orchards with the expectation of raising the *finest fruit*, or *healthy long-lived trees* on *light thin soil*.

It is my own belief, based on some little observation and practice, that no soil will grow the best peaches, i. e. the largest and finest flavored—except it is good *wheat land*.

I have some land in this county of the character usually selected for Peach orchards, and I have grown a limited orchard for many years past, with the usual success, viz., tolerable fruit and short-lived trees. About eight years ago, after visiting a neighbor in the upper part of New-Jersey, where the soil is good strong wheat land, I determined to change my plan of raising them altogether. I considered that we mistook the nature of this fruit tree; that it really requires more generous culture.

Choosing a tolerably good field on my farm, I set about preparing it for an orchard. This was in October. It was on a fair sandy loam, rather light, on a subsoil of gravelly loam.

My idea was to deepen and enrich the soil of this field before planting the trees. It is not, I believe, considered well to subsoil where the underlayer is gravel. But I made the experiment nevertheless, as it was, I thought, my only chance for decided success.

The trees in this orchard were to be planted sixteen feet apart. As labor and manure were both of consequence to me, I determined to make my first experiment by subsoiling only half the area to be set out with trees.

This I did by plowing and thoroughly subsoiling straight strips across the whole field, eight feet wide. The subsoil plough

followed after the common plough, and had two yoke of cattle to draw it. By this means I loosened and stirred up the gravelly substratum to the depth of sixteen inches; it became, also, considerably mingled with the top soil. The land was in tolerably good order, but I had it dressed with a strong lime compost, (lime and peat,) just before the subsoiling was begun.

The remaining strips of the field were simply plowed in the common way, and the whole harrowed together.

I then planted the rows of trees, as nearly as I could, in lines running through the middle of the subsoiled strips. This gave them a prepared surface four feet wide on each side, and sixteen feet in the row from tree to tree.

The trees grew more vigorously the first season after transplanting, than I ever saw any do before. Here and there as I saw a sickly looking one, during this and the next two years, I immediately took it out, and filled its place with another of healthy growth.

The result of my experiment has been most satisfactory. The orchard is in excellent health and a good bearing state, though it has been in bearing now to the sixth year. The *flavor* of the peaches raised in it, is *much finer than I have ever raised* otherwise in the same soil. And a small orchard set a year since on a joining farm, in a soil quite like my own, but planted in the ordinary way—that is on thin light soil, unprepared, bore its two crops of fruit, then failed, and had to be rooted out.

There is no doubt but my success would have been more complete if I had subsoiled the *whole* of the land. This I could not afford to do at the time, but those having capital would of course do so. I remarked during the first three years, when I raised root crops in my orchard, that the growth of the crops was a great deal finer, and the yield nearly a third more on the strips that were prepared or subsoiled, than on those that were only surface ploughed.

Your readers may draw their own conclusions. I will add, before finishing my letter, that after some little practice, I am strongly in favor of the mode of *shortening in* the Peach, which you have so strongly urged upon all cultivators of this fruit. It appears to me to be a great improvement upon all other modes of pruning the peach tree. Your friend. S.

Bucks Co., Pa., Sept., 1847.

A HINT TO PLANT GROWERS.

BY A CONSTANT READER.

Dear Sir—I wish to send you a few lines concerning a mode of growing plants in pots, that I am induced to think of the very first importance. It may be known and practised by some of your readers in other parts of the country; but as those to whom I have mentioned it here are entirely unacquainted with it, and as, with me, they agree that it is a great thing in green-house cultivation, I leave it to your own judgment to make it known to those of your readers interested in exotics.

What I allude to is the use of *roasted turf* in the soil used for all green-house plants. It is, you know, the custom of many plant-growers to screen or sift all their compost for pots, thereby making it all of one uniform size; and no little pains is taken to mix the different kinds of soils so as to obtain just what is deemed es-

sential to the different tribes. I have myself been in the habit of following this practice for several years past, but I can assure you that since I have taken up the *roasted turf*, I find all my plants to thrive so well upon it, that I have abandoned the mixed compost system entirely. All that I use now is roasted turf and good fresh loamy soil, or roasted turf, loamy soil and a little peat, when heaths, etc., are to be grown.

After putting some potsherds in the bottom, for drainage, I fill up the pot one third with the rough pieces of roasted turf, broken as large as eggs. The remainder of the pot is filled with equal parts of loamy soil, and bits of the turf, the latter chopped up or crumbled rather coarsely. I find on turning out a plant that has been growing for several months in this way, that the bits of roasted turf in the bottom are a mass of vigorous fibres, from which I gather that this substance is full of nutrition for plants. It gives the foliage a very rich dark-green colour; Cape Jasmines, Camellias, Oranges and Lemons, and all plants whose foliage is apt to turn yellow without any apparent cause, grow with rich deep green leaves, when potted with the *roasted turf*.

The use of this material is not original with me, as I first obtained a knowledge of it from Rivers' *Rose Amateur's Guide*, in which he recommends it for growing *Roses in pots*, in the following terms: "I have used with much success turf roasted on a sheet of iron, placed in temporary brick work, under which a moderate fire is kept: about an hour's roasting is sufficient."

My way of roasting it is very simple. I cut sods of the usual thickness, from an old common or lane, where the turf is good. I have a plate of old cast iron, about three feet square, which I obtained from a foundry in the city. This makes the top of my furnace, and the sides of it are a couple of brick walls, eight inches wide, laid up without mortar, say two and a half feet high. Upon these temporary walls, which make the sides of the furnace, I lay the iron plate. The whole thing is put up in twenty minutes, in any convenient spot out of doors, and the materials are taken down and laid away as readily till next wanted, when the operation is over. The fire is made of any refuse brush or faggots that the garden may afford. The operation of roasting is nothing more than charring the under side of the turf, and a pretty good heap of turf can be charred in a day; after which, what is not used at once should be laid by under cover till wanted.

It is impossible for me to overrate the good effects of the *roasted turf;* and I hope you will call the attention of your numerous readers to it, for I am confident that they will be much gratified and pleased with a trial of its virtues. If you wish it, you are at liberty to use any of the foregoing remarks. Truly, etc.

A Constant Reader.

Philadelphia, Aug. 27, 1847.

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Remarks.—We have no doubt of the most excellent results from the use of the *roasted turf*. The charred roots and grass not only act beneficially in condensing within their pores gaseous combinations, serving directly as food for plants, but the soil itself, when subjected to high temperature, becomes altered in character, is rendered capable of absorbing aëriform food for plants, which renders it more fertile than before. The well known practice of burning clay soils, is based upon this principle.

We have been in the habit, for three or four years past, of using the freshly charred refuse of the garden—a mixture of green and dry weeds, bits of wood, roots of trees, etc., to mingle with the soil in transplant-

ing favorite trees, and find it attended with very satisfactory results.

We have no doubt that the charred turf is increased in value by being cut from strong loamy or clayey, instead of sandy soil, on account of the more beneficial action of heat on soils containing a good deal of alumina; and also that it is most powerful in its effects, when used directly after it has been roasted, and before it loses, by the action of moisture, any of the gaseous combinations which it has formed.—Ed.

MEMORANDA ON PEARS.

BY THE LATE SAMUEL G. PERKINS, BOSTON.

I see by your horticultural journal, that you invite discussion on the comparative merits of different kinds of fruit, particularly pears, as the best mode of settling or establishing a useful and correct nomenclature.

The question has frequently been asked me by gentlemen who are beginning to cultivate fruits, "Which is the best pear?" and as there is no such thing as answering this question *directly*, I have answered that I could not tell, as it depended on so many circumstances of which I could not be supposed to have any knowledge.

In the first place, there are Summer, Autumn, and Winter pears, and each season calls for fruit of totally different properties. Then there are as many different tastes almost, as there are men; some like a sweet, luscious and aromatic fruit, as the Seckel; others like better the spirited, delicate and delicious flavor of the St. Ghislain. Then you have many that prefer the Gansel's (or Brocas) Bergamot, and other pears of that rich delicious flavor, without being too sweet or too spirited. The White Doyenné [or St. Michael] has always been a decided favorite with many when in perfection, and the Louise bonne de Jersey is esteemed inferior to none of the autumn fruits.

But the pear most esteemed in our market is, I believe, (when you speak of summer and autumn fruits,) the pear commonly known as the Bartlett. This pear, a wilding of 1770, in Berkshire, Great Britain, was sent or brought from England to this country by Mr. James Carter, in 1796 or 1797, for his partner, Mr. T. Brewer, who planted it in his grounds at Roxbury, under the name of the Williams' Bon Chretien, or properly, Good Christian, by which name it was then and is now known in England, where it is rated as second quality at Chiswick, as appears by the Catalogue of their gardener, Mr. Thompson. Here it got the name of *Bartlett* from the present owner of the Brewer estate, who, not knowing its proper name, allowed it to be called by his own. In France it is known as the Williams Pear (*Poire Guillaume*) where I think it is rated still lower than in England. Now many cultivators and fruit loving gentlemen esteem this pear above all others, and as it sells very high in the market, those who raise fruit to sell may well esteem it highly. But some gentlemen who esteem fruit in proportion as it suits their palate, are prone to consider it of inferior quality; although it is very large, and very handsome, and very juicy. But they say it tastes like rotten fruit. Suppose it be true, that it has slightly the taste of an incipient state of decay, is it to be condemned entirely on that account? The Medlar, which is one of the apple and pear tribe, was formerly

raised in England in considerable quantities, but was never eaten until rotted under ground. Is it not then assuming too much to put a fruit down merely because it has a rotten flavor? Who shall decide upon this question, where tastes vary as much in regard to the flavor of the fruit as it does as to the human countenance?

The best pear must depend on the use to which you mean to apply it; if for your own eating, that which suits your own palate most exactly, is the best; if for profit, that which will bring the most money in the market, is to be preferred.

In some places, fruit that is in an incipient state of decay is preferred to that which is sound, as may be seen by the following fact:

In the autumn of 1843, I was at Honfleur in France, in the neighborhood of which place, I saw several women mounted on donkeys, going, as they told me, to market with fruit. On being asked, what kind? Pears, was the answer. What kind of pears? The Messire Jean, was the reply. As this pear was a great favorite with me, when I was able to bite through its hard sides, (for it is the extreme and the perfection of the breaking pears, as the Brown Beurré is the extreme and the perfection of the soft-flesh or buttery pears.) I gave the woman a small piece of money, and asked the amount in pears. With this request she complied, by giving me a number of these fruit, which I found were all rotten. On asking her in an angry tone, why she gave me a parcel of worthless, rotten fruit, she laughed in my face, and said, "You joke, I believe," and told me I must be a green one, indeed, not to know that this pear was always rotted before it was eaten. "The pears," said she, "are in perfection, and if you are so ignorant as not to know what is good, it is no fault of mine, so good morning to you," and off she drove, leaving me to swallow the imposition as I considered it, or the joke as she did, or the pears themselves, as I thought best.

But we have a great variety out of which a selection may be made, to gratify every taste, some of which varieties we will now enumerate.

Those pears that are considered as summer pears, are Madeleine, Harvard, Jargonelle, Green Chisel, Muscat Robert, Blanquet à longue queue, Franc Real d'été, several of the Bergamots, such as the Red and the Summer; also the Catharines, or Rousselets, or what are commonly called the Summer Caten or Catern, and the Rousseline. Many of these are esteemed and valuable fruits, when raised for the use of the cultivator and his family. If I were called upon to select six of the finest *summer* pears for a private garden in the country, I should name the Madeleine, the Harvard, the Jargonelle, Summer Franc Real, and Red Bergamot.

Among the *autumn* Pears, there are, besides those above mentioned, the Dix, a wilding of Boston, inferior to none other, if all its valuable properties be considered. In appearance, form, flesh and size, together with its fine texture and delicate flavor, it resembles the St. Germain, and is, as an *autumn* pear, what the St. Germain, when in perfection, is as a winter pear, the most valuable species with which we are acquainted.

The Brown Beurré is another pear, perfecting in October, of superior merit, but it does not last long enough to give it the value of the Dix.

The Beurré Diel [on quince stocks] is another pear of distinguished merit, if it be properly treated, and kept till it be entirely ripe, and will be more and more esteemed as it is more known.

The Marie Louise and Josephine, are

both excellent, as are the Verte Longue, the Capiaumont, the Sylvanche Vert, the Urbanist and Duchesse d'Angoulême.

But the autumn pear, under the name of Van Mons' Leon le Clerc, which has lately been brought into notice, has a great reputation in England, whence it was imported a few years since. I have had this fruit in bearing two or three years, and have found it very good, but not equal to the account given of it by Mr. Loudon in his Horticultural Journal. I prefer the Dix pear to it, although the Dix is not so large or so handsome; but it continues in eating longer, and when well ripened, has, to my taste, a better or more agreeable flavor.

Besides the above, there are several other kinds of autumn pears that deserve attention, such as the Beurré Portugal, the Figue d'Amiens, the Beurré Bronzé, the Vicar of Winkfield, Wilkinson, and others of equal value.

And, among autumn Pears, were I to select, I should name the Dix, the St. Ghislain, Gansel's Bergamot, Beurré Diel, Seckel, Marie Louise, White Doyenné (or St. Michael,) Isambert, Louise bonne de Jersey, Duchesse d'Angoulême, Van Mons' Leon le Clerc, and Urbaniste.

As regards the *winter* Pears, the Napoleon and Passe Colmar may be considered as belonging to this class, although they sometimes ripen in November, but may be kept till late in December with proper care. These are both excellent fruits.

Among the new or Belgian Pears, that ripen later in winter, those mostly esteemed are the Winter Nelis, the Glout Morceau, Beurré d'Aremberg, and Easter Beurré.

Although the St. Germain, the Virgoulouse, the Winter Colmar, and Chaumontel, are no longer cultivated in the open country near the sea-board, yet they still may be, and are raised in towns, as in Boston, in perfection, and may be in other cities, where they find that protection which the open country does not afford them in New England. Of these, the most valuable is the St. Germain, which fruit possesses more of the useful and valuable qualities which we require, than any other of the winter sorts; as it begins to ripen in January, and continues, if properly taken care of, into March and April, while it possesses the excellent texture of the buttery sorts, and is among the finest flavored of the pear tribe. [The St. Germain ripens fine crops here, and still finer in the interior of the State of New-York.—Ed.]

But as I have said before, this decides nothing; for my taste may and would perhaps, be condemned by well informed gardeners. In fact, on this subject of taste in the flavor of fruits, I have long since become convinced, that no one can judge for all others, as I once had a practical evidence of its extraordinary deviation from what I had thought an established rule.

Being in Boston market in the autumn, I was, with several other persons, looking over some baskets of peaches and pears at one of the fruit and vegetable stalls. Presently a sailor entered, and the fruiterer offered him a choice of his fine fruit, by call-his attention to his fine water melons and musk melons, and apples and pears, peaches and plums, of which he had an abundant supply. But Jack turned up his nose at all these, and fixing his eye upon a green cucumber, he exclaimed, "None of these for me, a cucumber for my money!" and applying the action to the word he seized upon one of them, and clapping the bitter end into his mouth, he ate away upon it till the tears ran out of his eyes, and he was almost suffocated by the hasty and greedy manner that he swallowed it. The bystanders looked at him with astonishment, ex-

pecting to see him choke; at length, however, he cleared his throat sufficiently to give utterance to his words, when looking at a man who stood before him, watching his delighted and distorted countenance, he exclaimed, "If you will believe me, sir, it is the first I have tasted this year!"*

S. G. P.

IS FERTILIZATION NECESSARY?

BY SENEX, NEW-YORK.

A. J. Downing, Esq.—*Dear Sir:* I perceive in the controversy respecting the strawberry, it is considered by both parties, that perfect stamens and pistils are necessary to the production of fruit. If by the fruit, however, we understand simply the fleshy receptacle in which the seed, (which is really the fruit) is imbedded, I cannot conceive what the development of the sexual organs of the plant has to do with its formation.

The size of all fleshy fruits depends upon a monstrous development of the receptacle, as in the strawberry, or a similar development of the cellular tissue, by which the seeds are surrounded, as in the apple; and there is no doubt that this development causes the sexual organs of the plant to become sterile. In many vegetables, also, the monstrous development of the tissue of the stem, root or leaves, can only be obtained by preventing them bearing seed; and every horticulturist will perceive, upon a moment's reflection, that very many of his highly prized productions are obtained, directly or indirectly, in this way.

I have no doubt you have eaten many excellent fruits in which you may have observed that there were no seeds, and yet the fruit was fully developed: for instance, the Pine Apple, the Banana, the Bread-fruit, the Pear, Apple, Cherry, Plum, Peach and Barberry; indeed nearly all our cultivated fruits produce seeds but very sparingly, and very often not at all. From the above you will see that good and perfect fruit can be obtained without impregnation, and similar instances are to be found in the animal kingdom; thus hens lay eggs without impregnation, which are equally as large and good for domestic purposes as those which are impregnated; and also capons, and indeed all our domestic animals, become larger when castrated, as there is then a greater development of their cellular tissue, etc.

I think, if cultivators will reflect on the above hints, they will find that their failures in obtaining good crops are owing to some other causes than the absence of stamens and pistils, and are to be found in the unsuitableness of the soil, manures, climate, or the like. As to their being diœcious, that is sheer nonsense; there is not a diœcious plant in the order Rosaceæ, to which the Strawberry belongs. The genus Cliffortia, which is diœcious, was once placed in the order, in the tribe Sanguisorbea; but this tribe is now, I believe, made a separate order. Writers should be careful to use words in their strict sense; and if the word diœcious were thus used, it would mean that Hovey's Seedling strawberry bore flowers

* We should rather incline to call this an instance of the sailor's coarse *appetite*, than his *taste* Indeed, no word is so much misapplied as the latter. We consider a *taste*, by which we mean a *nice sense* of *discrimination*, as the result of good natural organization, joined to a familiar acquaintance with a great variety of the different objects on which the taste is to be exercised. Thus no man could be said to have a fine taste in pictures, who had never seen any thing better than the daubs of a village sign painter. To go lower, we believe M. Soyer would not give a person credit for any taste in cookery, who had never eaten anything except "plain boiled and roasted;" and we should certainly deny any one the right to claim a taste in fruits who does not know by heart, at least all the finest standard varieties.—Ed.

which on one plant were furnished with female organs, and on another plant with male organs; so that even were that doctrine true, there would be no need of introducing other varieties in order to make them fruitful, and also that there were two Hovey's Seedlings raised, one female, and one male, an evident absurdity; so that the question resolves itself into this, that the plant, having lost its sexual organs through excessive cultivation, a different mode is likely to restore them; but as I have already stated, I cannot conceive that they are necessary to what, in horticultural parlance, is called the fruit. SENEX.

New-York, Aug. 25, 1847.

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REMARKS.—That there are instances of fruit being borne without the aid of the stamens, is undoubtedly true; but for the most part these are exceptions to the general law. Even in the case of seedless apples and other fruits, it is necessary that the pistils be fertilized by the pollen, in order that the fleshy receptacle which we call the fruit, should swell and arrive at maturity.

In the case of the strawberry, there have been so many experiments made lately, that we are no longer in the dark as to the facts regarding it. It has been carefully proved, that certain sorts, called, from their deficiency in stamens, *pistillate*, as the Hudson, for example, will not, if planted entirely separate from all contact with other varieties, called staminate, from their having the stamens fully developed, set one berry to a dozen blossoms; while the same *pistillate* sorts, if planted along side of *staminate* ones, set nearly every blossom, and bear large crops of fruit. This has been tried repeatedly, till it is impossible to doubt its truth.

On the other hand, it is perfectly true, as SENEX states, that the strawberry is not a diœcious plant; and that this so called staminate and pistillate form, is only an anomalous state of the plant, origin ated or afterwards produced in certain varieties by cultivation. Thus, in some soils, certain sorts called *staminate*, such as Keen's Seedling, Ross' Phœnix, etc., bear most abundant crops, because they have the normal proportions of pistils, while in others they are almost barren, because the pistils are not well developed, and the flower does not set any fruit. Such sorts, therefore, vary, and cannot fully be depended on. As it is now ascertained, the most *certain* mode of growing large crops, is to plant large beds of pistillates alternate with small beds of staminates, in order that the latter may always fertilise the former, since the staminates, though they frequently vary, and fail to produce pistils, yet always produce stamens. Most persons are now adopting this as the shortest and surest mode of producing large and constant crops in this climate. ED.

REMARKS ON TWENTY-FIVE PEARS.

BY J. L., PHILADELPHIA.

As there is a good deal of diversity in the opinions respecting many new fruits, in various parts of the country, owing to differences of soil and climate, we take the liberty of printing the following extract from a letter received from a gentleman in Pennsylvania, whose opinion is of value, and who has paid a good deal of attention to the culture of fruits. His soil, we may premise, is a good sandy loam.—ED.

—— As I know you wish to collect information about the success or failure of dif-

ferent new fruits, in various parts of the country, I add a few hasty notes of my experience with twenty-five sorts of pears in my collection. The trees were planted in 1837, and have been in bearing several years.

Beurre Bosc. This capital fruit cannot *be overpraised.* As it always bears with moderation, the fruit is always of good size, the appearance handsome, the quality most excellent. As a September pear, I prefer it to all others received from Europe within the last twenty years.

Beurre Romain. A pretty good pear, and an excellent bearer. The fruit is always fine, but its flavor not quite first rate.

Cabot. Bears immense crops, and is a handsomc Brown Beurré-like pear. But it rots so quickly at the core after it approaches maturity, that it is of little value.

Bon Chretien Fondante. A most variable fruit—sometimes juicy, melting and delicious, at others worthless. Cannot be depended on with me.

Dearborn's Seedling. Perhaps the finest of all early pears. Flavor excellent; without a single faulty specimen on a tree; and the tree itself an exceeding and most regular bearer. It appears to me this variety is not generally estimated as it deserves. In my experience, it proves the finest of all *early* pears.

Golden Beurre of Bilboa. This remarkably fine fruit ripens here at the last of August. I think it worthy of all commendation. It is so uniformly handsome, of a beautiful pale gold colour, and the skin always marked with a russetty patch or *escutcheon*, round the stalk. It bears well with me, both on pear and quince stocks, and the flavor is delicious. It is seldom seen in this neighborhood; but it deserves to be a general favorite. [We concur in this opinion, and annex an outline of this excellent fruit.—Ed.]

Princess of Orange. Sometimes excellent, but not to be depended on, except on pear stocks, and not of first-rate flavor then.

Washington. A good and handsome native pear, and when well cultivated, very beautiful.

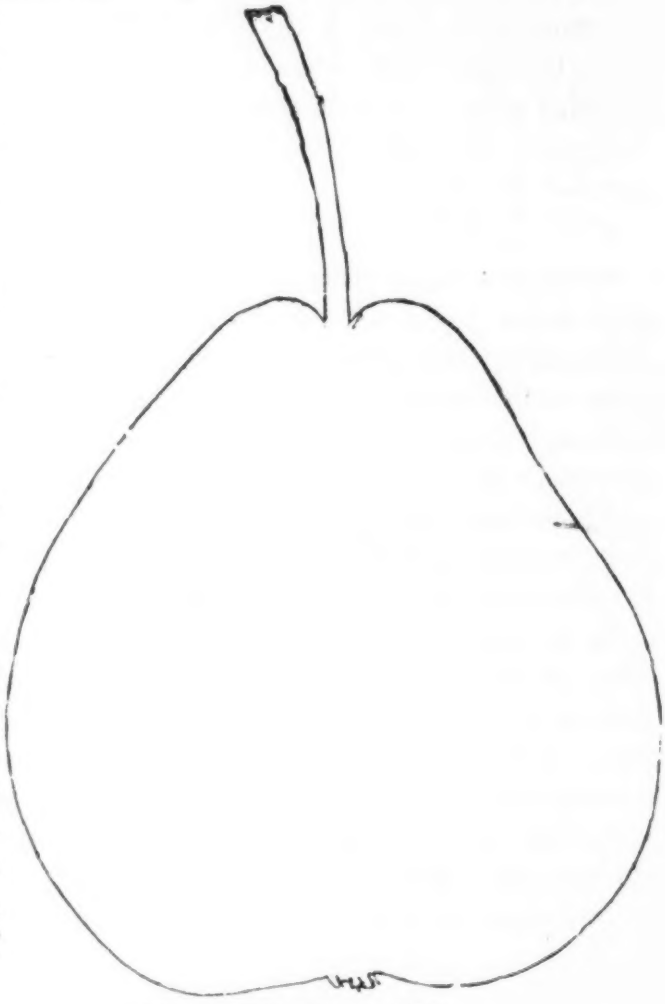

Fig. 29. *Golden Beurre of Bilboa.*

Beurre Diel. Always large and productive, but the flavor can only be depended on when it is grafted on quince bottom. On pears, especially if the tree is young, it is frequently pithy and tasteless. The same remarks will apply to the *Duchess of Angoulême.*

Comprette. Not a large fruit, nor a very

abundant bearer, but the flavor always sugary and good.

Heathcot. I have noticed your remarks on the good qualities of this fruit, in the last volume of the Horticulturist. It deserves all you say. The tree is thrifty and free from blight. The fruit is among the best of the autumn pears.

Fondante d'Automne. It is a pity that this delicious pear is not higher coloured, or more attractive in appearance. It is the only pear that I know, which rivals the Seckel in honied aromatic flavor.

Chelmsford. A large, coarse fruit, yellow, with a red cheek, only fit for cooking.

St. Ghislain. This excellent fruit is a little too variable—some seasons delicious, others pithy.

Gray Doyenne. Among the very best pears in the world! Always good, rather later, and always fairer than the White Doyenné or Butter pear.

Capiaumont. As prolific as a Boston Russet apple, and therefore profitable for the orchardist; but too apt to be astringent to suit the palate of a good judge of fruit.

Louise bonne de Jersey. Always bears large crops of handsome, juicy, refreshing pears. This pear, for September, may be likened to the Bartlett for August; i. e. it always gives satisfaction by its productiveness and good quality.

Aston Town. A poor fruit; it may please an English palate, but its small size and indifferent flavor are not relished here.

Belle et Bonne. Large, but of a poor flavor, and on the whole not worthy of cultivation.

Marie Louise. Very fine, as almost every pear grower knows. The tree, however, wants a rich deep soil.

Hericart. Flavor very poor; a sort quite unworthy of general cultivation.

Petre. This is a very favorite fruit of mine. It has much of the delicious qualities of that old favorite, the Butter pear (Doyenné.)

Van Mons' Leon le Clerc. This variety has now borne two years a very few specimens only. The fruit is large, fair and handsome, and the flavor very good. It will, from the vigor of the tree, and its fine size, undoubtedly be a popular fruit.

Stevens' Genesee. A very excellent American pear, with all the productiveness and vigor of our native sorts. The fruit grows large, and I consider it a standard sort.

Urbaniste. A delicious fruit. Persons who have small gardens, ought, however, to grow it on quince bottoms, as on pear stocks, it takes eight or ten years before it becomes productive. Your friend.

J. L.

POMOLOGICAL REFORM.

Our readers do not require to be told that the all-engrossing subject, which, at the present moment, occupies the minds of horticulturists generolly, in the United States, is the cultivation of the finest hardy *fruits*. The orchardist, within convenient distance of markets, considers it the best investment of capital applied to land; and the amateur finds in the collection and cultivation of all the choicest sorts, both an agreeable and interesting occupation, and a means of conferring a real benefit on the district of country in which he resides; while the more humble private grower, with limited space, finds in the produce of his half dozen select trees, almost as much to delight and inte-

rest him, as the celebrated Reyboldts of Delaware find in their thousand acre peach orchard.

With this great and increasing attention to the cultivation of fruit, comes also the continual production of *new varieties*. Many of these spring up accidentally from seed; others are the product of seeds gathered from choice varieties, and planted with a view to improved sorts; and a few are the result of hybridising, pursued by the more scientific gardeners and experimentalists.

Of course a large proportion of these new seedlings are either of too indifferent quality to be worth notice, or they are second-rate; or they are inferior, or only equal to many sorts already in cultivation.

With the well known partiality of parents for their own offspring, it is common enough to see the originators of these second or third-rate seedlings pressing them upon public attention as fruits of the finest quality—unsurpassed and unsurpassable; and having, as they conceive, an undoubted right to pass final judgment on their merits, they confidently ask the public to buy and plant these new sorts, which, when fairly proved, often turn out of little or no value, or decidedly inferior to those already in cultivation.*

Confident as we are, that the United States will produce many, as it has already produced a few, new varieties of fruit equal to any in the world, and superior to any for our soil and climate, it is becoming highly necessary that some system should be adopted which will protect the public against a flood of new varieties of little or no value.

Such a safeguard can only be found, by taking the judgment of a new variety, the describing and recommending of the same, out of the hands of all but *pomologists* of acknowledged acquaintance with all the standard sorts, or the fruit committees of horticultural societies *well qualified* for the purpose.

Whatever may be the natural fondness of a cultivator for good fruit, observation will soon convince any one acquainted with the matter, that no person is competent to judge of the relative qualities of a new variety, but one who is already conversant with all those leading sorts of acknowledged character which exist in the best collections in the country. Ignorant of these, the novice often rates a fruit as of first rate quality, which a moment's examination, by an experienced judge of fruits, determines to be of second quality, and inferior to a large number already known. A natural pride prompts the novice, who believes he has produced something of value to the public, to give it his name, and distribute it extensively among horticulturists and propagators of fruit. Hence we see catalogues needlessly swelled with the names of dozens of new fruits, not one third of which upon trial ever prove at all worthy of cultivation.

The only remedy lies in restricting the right to describe, name, and publish, a new fruit, to competent pomologists, in the same way that the right to describe and name a newly discovered plant is confined to botanists only, insects to entomologists, birds to ornithologists, etc., etc.*

By adopting this course, and establishing some standard by which a new fruit must be measured, with fixed rules governing the nomenclature, and description of fruits, pomologists and fruit committees will have something definite to guide them; the public will have some guarantee for the value

* We have almost daily proofs of this; and while we write, we have just received a sample of fruits of a "new seedling pear," highly praised, but which, on examination, proves to be a well known old sort that we have known for twenty years, and which no person who had ever seen it once, could afterwards mistake!

* Of course the *originator* of a new variety which proves of real merit, should retain his right to suggest the *name* for the variety, which the pomologist describing it, if it were a proper and significant one, would be bound to adopt.

of new sorts brought into notice; and pomology will soon assume the character of a science.

Along with this new order of things for the *future*, something must also be done to prevent continual perplexity and confusion with regard to the *past*. That all pomological works of the last thirty years have not been written with the accuracy that has characterised other branches of natural history, is greatly to be deplored. To attempt, however, to remodel every thing that has been done, to alter names extensively, and to reconstruct the old with the same method as we may do the new, would be a vain and hopeless task. It would only make confusion worse confounded.

The best that can be done with the pomology of the past, is to select the latest and most authentic work on either side of the Atlantic, and establish these as the *standard* for the names of all fruits already known and described. By doing this, we shall at least secure uniformity, and something like stability in the names of the old varieties.

The *London Horticultural Society's Catalogue* will, we think, by general consent, be chosen as the *standard European authority*. The great and extraordinary facilities enjoyed in that garden, and unceasing devotion there to the subject, for many years past, have given this work, though it is not without defects, a higher character, in many respects, than any other of foreign origin.

In all matters relating to American fruits, some American work, of well established reputation, must also be taken as the standard.

With the past thus to be settled by reference to recognized authorities, as standards, and all action in the future controlled by judicious established rules, we may hope that this most interesting branch of horticulture, of so much general importance to the country, will be relieved of the embarrassments that have so long surrounded it.

Impressed, as we are, with the importance of this subject, we have addressed a circular to several of our leading horticultural societies, in various parts of the country, asking their attention to it, and suggesting such rules as we believe, would, in a great degree, cover the ground. We learn already, that the matter will be likely speedily to receive favorable attention, and we hope to publish such *Pomological Rules* as shall be adopted, in the next number of the Horticulturist.

This subject is attracting the attention of many intelligent horticulturists in various parts of the country. The following remarks on the new seedling Ohio strawberries, by Mr. Beecher, are from the Western Farmer and Gardener:

"We are about to have an immense increase of seedlings. The process of origination is not difficult. Many amateurs are already sending forth dozens of kinds. Are these experiments conducted with any special aim? What are the faults of the old kinds? Are the new sorts bred with reference to certain desiderata? The mere fact that a kind is new, and large, and good, does not entitle it to a name, and a price of five dollars a dozen plants. There is no special merit in raising very good sorts. *No strawberry ought to go forth, unless in some respect it is decidedly better than established kinds.*

Our attention has been more especially directed to this matter, by the recent report of the Cincinnati Horticultural Society, upon seven seedlings of Mr. Burr's, Columbus, Ohio. We should have been glad to have had the report more explicit upon two points, and if any of the gentlemen on the committee will yet give us the information, we shall feel obliged to him.

First. Do the committee state *on their own knowledge*, the *habits* of the kinds mentioned? Or, is it stated upon the testimony of Mr. Burr, that one "bears well;',

another, "a full bearer;" "a profuse bearer." Without doubt, Mr. Burr's statement would satisfy any man, that any one of his seedlings was a profuse bearer—*so far as his experience had gone.* But if they have been cultivated as yet in but one place, if only under Mr. Burr's management, then it ought to appear, in any report, *to what extent they have been proved.* As it is, the greatest number of readers will understand Messrs. Longworth, Ernst, Hoffner, etc., as stating on their own personal knowledge, and after a proper trial, that these plants have, *as a general character*, the habit of "profuse" bearing, "abundant" bearing, "good" bearing, etc.

The second matter on which we lack information, is the comparative merits of these candidates. Are they all better than any now cultivated? Is each better in some one respect? Are they more hardy, more prolific, larger in fruit, higher flavored or colored? Is there good reason, aside from their *newness*, why they should supplant old sorts in our gardens, or share "bed and board" with them?

It is not enough that a society should report simply with their eye upon a lot of fruit. As the report is meant for the community, it ought to be carefully considered what effect a given report will probably have upon the community. Did the Cincinnati Horticultural Society design to say to cultivators—"These seven seedlings of Mr. Burr's have been thoroughly tested, and are found worthy of general cultivation;" or did they only mean to say—"In so far as we have been able to judge from the mere inspection of the *fruit*, we are pleased with Mr. Burr's seven seedlings, and recommend that they be further tried, until their full habit and worth be ascertained."

It is our impression, that the latter report was all that was warranted by the facts; but the first one is certainly the one which, in effect, has been made.

We do not make these remarks to prejudice Mr. Burr; or because we think his seedlings less than excellent. The fact is, that we know very little about them. We are told that they are excellent: so is the Hudson, Early Virginia, Hovey, etc., etc. Are these *as* good? Are they better? Do they supply any deficiency in old sorts? Do they bear later, or earlier, or better, or larger fruit, or in *what respect* do they claim admission among standard strawberries?

The difficulty of raising apples and pears, will put some kind of limit to their increase. But if the fever once rises for originating small fruits, whose term of maturity is short—a year or two—we shall be deluged with novelties, unless there be distinct *terms of admission.*

THE IDA GREEN GAGE.

The upper half of the Hudson river has, very deservedly, a high reputation for its plums. The heavy soil is peculiarly adapted to the growth and productiveness of this fruit, and there is scarcely a season when the fruit gardens and orchards, about Hudson, Albany, Troy, (and we may include Schenectady,) do not offer a fine display of this excellent fruit.

The plum at the head of this article has considerable local reputation, as being a fine seedling fruit. Knowing our desire to examine specimens, Mr. Reagles, of Schenectady, a nurseryman, who ranks it very high, and has already propagated it to some extent, has very obligingly sent us specimens obtained from the original tree on Mount Ida, near Troy, N. Y., accompanied by the following note:

"*Schenectady, N. Y., Sept. 7.*

"Dear Sir—I send you, by express, specimens of the new seedling plum, called the *Ida Gage*, taken from the original tree now growing on Mount Ida, (Troy.) I am not aware yet to whom it owes its origin, but will endeavor to ascertain and inform you.*

* We presume this tree is a seedling of Mr. Hearty's, in whose excellent fruit garden, on Mount Ida, we saw a number of seedlings resembling the green gage, some few years ago.—Ed.

"Regarding the qualities of the green gage, I have but to say, that it is equal to the green gage in flavor, superior to it in size and beauty, resembling a handsome red-cheeked nectarine, to recommend it to fruit-growers as worthy of a place in the smallest garden. I do not think I exaggerate its merits, taking every thing into consideration, when I say there is no plum extant superior to it. It is exquisitely beautiful, exceedingly luscious in flavor, productive, and hardy. You will, however, be best able to judge of its merits, and describe it, as I send you ripe specimens. Respectfully yours, "C. Reagles, Jr.

"A. J. Downing, Esq."

We are not willing to give any fruit so high a rank as our correspondent does the present one, without seeing it several seasons. We will, however, say that this is a most excellent seedling of the green gage, very strongly resembling it in flavor, and general appearance; with the distinctive characteristics of larger size, a longer stalk, and a purplish red cheek, instead of the few streaks or dots of purple on the sunny side of the Green Gage.

It appears to be a distinct sub-variety of the Green Gage, and if, as we are inclined to think likely from all we hear of it, it turns out to be uniformly larger and more productive, it will certainly take a high rank among plums.

As it is unquestionably the finest seedling fruit among a considerable number that we have examined this year, we shall describe it, and let another season's experience settle its exact merits. In the mean time, we think there can be little doubt, that it will prove a decided acquisition.

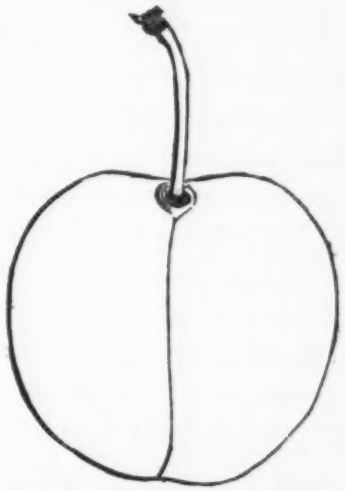

Fig. 30. *The Ida Green Gage.*

Ida Green Gage.* Fruit roundish, strongly resembling the Green Gage in general appearance, but one-third larger. Suture very faintly marked half round. Skin of the colour of the Green Gage, but the sunny side washed with purplish red. Stalk nearly an inch long, rather slender, inserted in a very slight depression. Flesh greenish amber, very melting and juicy, separating freely from the stone, and of the sprightly luscious flavor of the old Green Gage. Stone small. It ripens about the same time with the Green Gage, or a few days later. Branches smooth, and the growth of the tree much like that of the Green Gage.

Liquid Manure.—The papers occasionally contain accounts of interesting and successful experiments with liquid manure. It is indeed very valuable; but we believe, says Mr. J. J. Thomas, that a large share of the advantages result from the simple watering which the plants thus obtain. The manure itself should not, by any means, have all the credit, as we very well know from experience, that a single irrigation of garden plants has increased their growth to an extent hardly to be expected from the most copious manuring.

* We propose to call this "Ida Green Gage," instead of simply "Ida Gage," to show its character; and that it is a *sub-variety*, and not in all respects an entirely distinct sort.

POPULAR ERRORS ABOUT THE "RISE AND FALL" OF SAP.

BY PROF. LINDLEY, UNIVERSITY OF LONDON.

WHAT a curious hallucination is that which supposes the *sap of trees to fall*, or settle, in the winter into the roots! One would have thought that the notorious difficulty of cramming a quart of water into a pint measure, might have suggested the improbability of such a phenomenon. For it certainly does require a very large amount of credulity to believe that the fluids of the trunk and head of a tree, can by any natural force of compression, be compelled to enter so narrow a lodging as the root. The idea, however, has established itself in some persons' minds, and, we presume, in connection with that other old vulgar error, that the sap is in rapid motion in the spring time, in the roots of a tree, before it begins to flow in the branches. These whimsies took their origin in days when the world was contented to accept assertions upon trust, and when hypotheses and vain imaginings formed the debased paper currency of science. But now men have found out the value of a golden standard, both for money and for knowledge; they call for facts before theories; and the result, already, is a wonderful disturbance in the crowded ranks of scientific as well as historical legends.

We shall assume the word *sap* to signify the fluids, of whatever nature, which are contained in the interior of a tree. In the spring, the sap runs out of the trunk when it is wounded; in the summer, autumn, and winter, it does not, unless exceptionally, make its appearance. But in truth the sap is always in motion, at all seasons, and under all circumstances except in the presence of intense cold. The difference is, that there is a great deal of it in the spring, and much less at other seasons.

When a tree falls to rest at the approach of winter, its leaves have carried off so much more fluid than the roots have been able to supply, that the whole of the interior is in a state of comparative dryness; and a large portion of that sap which once was fluid, has become solid, in consequence of the various chemical changes it has undergone. Between simple evaporation on the one hand, and chemical solidification on the other, the sap is, in the autumn, so much diminished in quantity as to be no longer discoverable by mere incisions. The power that a plant may possess of resisting cold, is in proportion to the completeness of this drying process.

When the leaves have fallen off, the tree is no longer subject to much loss of fluid by perspiration, nor to extensive chemical changes by assimilation, for the leaves are the principal organs of perspiration and assimilation. But the absorbing power of the roots is not arrested; they, on the contrary, go on sucking fluid from the soil, and driving it upwards into the system. The effect of this is, that after some months of such an action, that loss of fluid which the tree had sustained in autumn by its leaves, is made good, and the whole plant is distended with watery particles. This is a most wise provision, in order to insure abundant food to the new-born leaves and branches, when warmth and light stimulate them into growth.

During all the winter period, the sap appears indeed to be at rest, for the re-filling process is a very gradual one. But M. BIOT, many years ago, proved, by an ingenious apparatus, that the rate of motion of the sap may be measured at all seasons; and

he ascertained it to be in a state of considerable activity in mid-winter. Among other things he found that frost had considerable influence upon the direction in which the sap moves. In mild weather, the sap was constantly rising; but when frost was experienced, the sap flowed back again—a phenomenon which he referred to the contracting power of cold on the vessels of the trunk and branches, the effect of which was to force the sap downwards into the roots lying in a warmer medium; then, again, when the frost reached the roots themselves, and began acting on them, the sap was forced back into the trunk; but as soon as a thaw came on, and the ground recovered its heat, the roots, out of which a part of the sap had been forced upwards, were again filled by the fluids above them, and the sap was forced to fall. A large Poplar tree, in the latter state, having been cut across at the ground line, the surface of the stump was found to be dry, but the end of the trunk itself dripped with sap. Sap, then, is always in motion; and if it ever settles to the root in a visible manner, that is owing to temporary causes, the removal of which causes its instant re-ascent.

As to the idea that the bleeding of a tree begins first at the root, and, in connection with this supposition, that what is called the rise of the sap is the cause of the expansion of buds, and leaves, and branches, nothing can well be more destitute of any real foundation. If in the spring, when the buds are just swelling, a tree is cut across at the ground line, no bleeding will take place, neither will the sap flow for some distance upwards; but among the branches the bleeding will be found to have commenced. Let A B represent the trunk and branches of a tree; let incisions be made at *c*, *d*, *e*, *f*; the sap will run at *c* first, then at *d*, next at *e*, and last at *f*, next the roots. This was observed some years ago by Mr. Thompson, at that time the Duke of Portland's gardener, who tho't he had discovered that the sap of trees descends in the spring, instead of ascending; a strange speculation enough it must be confessed. The fact is, that the sap is driven into accelerated motion, first at the extremities of a tree, because it is there that light and warmth first *tell* upon the excitable buds. The moment the buds are excited, they begin to suck sap from the parts with which they are in contact; to supply the waste so produced the adjacent sap pushes upwards; as the expansion of the leaves proceeds, the demands upon the sap near them become greater; a quicker motion still is necessary on the part of the sap to make good the loss; and thus from above downward is that perceptible flow of the fluids of trees, which we call bleeding, effected.

Fig. 31.

The well known fact of trees sprouting in the spring, although felled in the autumn, proves that the sap had not at that time quitted the trunk to take refuge in the roots. Such a common occurrence should put people on their guard against falling into the vulgar errors on this subject.

PEARS ON QUINCE AND MOUNTAIN ASH STOCKS.

BY JOHN M. IVES, SALEM, MASS.

HAVING grown several varieties of Pears for ten years past upon Qnince root, and more recently upon the Mountain Ash and the English White Thorn, I have thought my experience might be of some benefit to those who are cultivating this fruit, in this section particularly; and as your excellent periodical is circulated largely among us, I have ventured to forward the following desultory remarks.

Your English correspondent, Mr. RIVERS, says of that fine pear, the *Beurrè Bosc*,—"it is exceedingly *refractory*," and that he is "not sure that it will live and flourish for any lengthened period, although double-worked on very thrifty stocks."

I have grown this Pear upon the Quince root for many years, and find it to grow luxuriantly, but it is *shy in its bearing;* but on the contrary when *double-worked*, as I now have it, upon the *Martin Sec* pear to bear equally with the Bartlett. I have counted thirteen fine large specimens upon a single shoot of thirty-six inches long. The *Bloodgood double-worked* does not answer, it being a poor grower, the fruit small, but colored upon one side. This variety, when grown upon its own stock, is decidedly the best early pear in my collection, and I cannot divine why it is not more highly prized by the cultivators around Boston. I have understood that the specimens exhibited at the Rooms of the Horticultural Society, have been below what you would denominate medium; this will probably account for the dissent your correspondent, Mr. NEWHALL, of Dorchester, made to your Pomological Gossip, in calling it first-rate or quality. A cultivator from Plymouth, on his return from Boston, was surprised to find the specimens of the Bloodgood upon my trees so much larger than those he had just seen at the Horticultural Rooms. The fruit this year averaged smaller than those of the two previous seasons.

I have the *Fondante d' Automne* (Belle Lucrative) grown upon the Mountain Ash, budded three years since, near the ground, which is very dwarfish, having as fine specimens in a cluster, of this truly delicious pear, as any upon my standard trees. The *Bloodgood*, *Seckel*, *Bartlett*, *and Bezi de la Motte*, worked upon the Mountain Ash, do not as yet promise much, the first named sort being the only one that has made any growth this season. The Seckel, which I have tried in various ways, upon the Apple, as recommended by our friend, Mr. ERNST, of Cincinnati, is a failure;* the grafts promised well for the first season, and then either died out, or came to a *dead stand;* I have, to be sure, a few small button-looking pears upon a sickly graft, which was placed upon a most thrifty stock of the *Sop-savine* or Sops-of-Wine Apple. I budded several varieties of the pear upon the English White Thorn; many of these have a fine two years growth—among them the *Bosc* and *Flemish Beauty*—the former of which you know has not the reputation of being a good grower upon the Pear or Quince root.

Among the varieties of Pears fruited this season, I find the *Long Green of Coxe*, *Golden Beurre of Bilboa*, *Fondante d' Automne*, *Andrews*, *Louise bonne de Jersey*, *Washington*, *Bezi d'Montigny*, *Buerre d'Amaulis*, *Winter Nelis*, *Lewis*, *Buffum*, *Flemish Beauty*, *Cushing*, *Heathcote*, and *Bon Chretien*

* This is the result of a number of experiments in various parts of the country.—ED.

Fondante, entirely free from blight or cracking; while the Buerré Diel, Dix, Bosc, and the old Pound Pear, have, in my garden, more or less blasted.

The Bosc is, however, perfectly fair when *double-worked* as named above. There is one pear which I think has been much underrated; I refer to the Buffum, a native fruit of Rhode Island. This is one of the most profitable market pears we possess; *it is a great grower and prodigious bearer;* the fruit medium size, and when ripened in the house handsomely colored; and although we should not consider it as first-rate in *quality*, it is yet a pleasant fruit, and highly prized by many here, as well as in its native State.

Yours very truly, JOHN M. IVES.

Salem, Mass., Sept. 13, 1847.

P. S. Most Pears average larger upon the Quince than upon the Pear stock—the Bloodgood seems to be an exception, and from its growing larger in my soil, which is a light sandy loam, made retentive by the application of leached ashes and clay, than in the strong soil around Boston, it undoubtedly requires a warm and light one.

REVIEWS.

THE AMERICAN JOURNAL OF SCIENCE AND ARTS: *conducted by Professors* B. SILLIMAN, *and* B. SILLIMAN, JR. *and* JAMES H. DANA. Second Series, No. 11, September, 1847: New-Haven.

SILLIMAN'S JOURNAL is one of the few periodicals of which an American may be proud. Established so long ago as 1818, it has ever since so steadily held its place, and shed the light of science over our hemisphere, that among the countless meteor lights of periodical literature which have flashed up and expired within the last quarter of a century, it appears like a fixed star.

The elder SILLIMAN alone established this most useful Journal, and gave it the high character, both at home and abroad, which it still enjoys. The new series before us, in its editorship, combines with the advantage of his matured knowledge and experience, that of the genius and energy of his son, and the well known abilities of Mr. DANA.

Among its contributors, are all those in any way remarkable among the scientific writers of the country. Its plan embraces the whole circle of the Physical Sciences, and their application to the arts, and while it is therefore indispensable to the *savan*, the student of nature, the engineer, or the mechanician, its pages also offer much that is exceedingly interesting to the general reader.

Our object in taking up this serial at the present moment, is to notice a very interesting address before the last meeting of the *British Association for the advancement of Science*, held at Oxford, which it contains.

This is the inaugural address, delivered by the new President, Sir R. H. INGLIS, at the commencement of the session. As it embraces a survey of the progress of science generally during the past year, every part of it is highly interesting, and we would gladly transfer it to our columns, but its length forbids us from so doing.

We shall, however, select some of the most interesting passages. First among these, for the eyes of our readers, are the following remarks on the progress of *Botanical Science*, and the reference to the recent discoveries regarding the phenomena of *fecundation in plants*, is worthy of particular attention.

I proceed now to notice the science of Botany; which, aided in these days by the microscope, and by chemistry, as to the structure, functions and uses of the living plant, and as to the analogies in

the vegetable world in its fossil state, presents one of the most interesting subjects of inquiry to the student and to the general observer.

Systematic botany is constantly receiving additions to the number of species.

In England, with respect to living plants, for the greater part of the accession to the plants in cultivation during the preceding year, we are indebted to Mr. Fortune, the Horticultural Society's collector in China, who has recently published an account of his mission; and we are not less indebted to those who, as collectors and correspondents in various parts of the world, communicate the results of their labors to the Royal Botanic Gardens at Kew. That establishment, under the direction of my friend, Sir William Jackson Hooker, has unquestionably become the first botanic garden in Europe. I use this expression on the authority of another friend whom I have had the privilege of knowing for forty years, whom Humboldt described as *le premier Botaniste de l'Europe*, accurate, sagacious, and profound, and whose knowledge is only equalled by his modesty. After this, it is not for your sakes but my own, that I name Robert Brown; may I add, in passing, the expression of every one's wish that he would deposit more of his knowledge in print.

Before I quit the subject of the great institution at Kew, I ought to mention as one of the latest accessions to it, a cactus weighing a ton, as stated by Sir W. J. Hooker, in his report laid before Parliament; who adds, that the collection of that most singular family, so recently made familiar to us, (he refers to the collection at Kew,) "is now unrivalled in Europe."

With respect to new species of plants received only in the state of specimens for the herbarium, they have been in part obtained from China, South America and New Zealand; but chiefly from Australia. The late expedition into the interior, or at least further into the interior of that great continent than in any other direction had hitherto been made—expeditions so creditable to the enterprise, perseverance, and intelligence of their conductors; have, however, been but little productive, so far as we at present know, in the department of botany. The animal productions of New Holland, so wonderful in their forms and structures, have long formed the most remarkable characteristic of its vast region; nor is its botany without distinctions of much interest, though as yet but very imperfectly explored. It may be said, however, in reference to the results of these later expeditions, which have penetrated further inland, that they have not brought to our knowledge any peculiarities in the vegetable kingdom so various and so striking as those which exist near the coasts, and which are sufficient to distinguish New Holland and the Australian colonies from the other regions of the world.

In the diffusion of the riches of the vegetable world, steam navigation has obviously been a most favorable auxiliary; so that, "even cuttings of plants" are now "actually sent successfully to Calcutta, Ceylon, &c." In speaking of the exports from Kew, it is not unfitting to add, that "between four and five thousand plants of the famous Tussac grass have been dispersed from the Royal Gardens at Kew during the past year."

The increase in the number of visitors to that most flourishing establishment is some evidence at least of an increase of a taste for the development of science, and probably of that increase of the love of science, which it is one of the objects of the British Association to encourage in all classes.

In 1841, the number of visitors was 9,174; but they are nearly doubling every year. In 1844, they were 15,114; in 1845. 28, 139; in 1846, 46,573.

In vegetable physiology, microscopic observers have of late been much occupied in investigating the phenomena of fecundation, and especially as to the mode of action of the pollen.

On this subject botanists are still divided. Several experienced observers adopt the theory lately advanced and ingeniously supported by Prof. Schleiden, of Berlin; while others of great eminence deny the correctness on which this theory is founded. Among these, the celebrated microscopic observer, Prof. Amici, of Florence, very recently in an essay — communicated to the scientific meeting held in 1846 at Genoa — has endeavored by a minute examination of several species of Orchis, to prove the existence of the essential part of the embryo anterior to the application of the pollen, which, according to him, acts as the specific stimulus to its development.

This view receives great support from some singular exceptions to the general law of fecundation.

Of these, the most striking occurs in a New Holland shrub, which has been cultivated several years in the Botanic Garden at Kew; and which, though producing female flowers only, has constantly ripened seeds from which plants have been raised perfectly resembling the parent:—while yet there is no suspicion either of the presence of male flowers in the same plant, or of minute stamina in the femaleflower itself, nor of fecundation by any related plant cultivated along with it.

This plant has been figured and described in a recent volume of the Linnean Society's 'Transactions,' under the name of *Cælebogyne illicifolia*, by Mr. J. Smith, the intelligent curator of the Kew Garden, by whom, indeed, this remarkable fact was first noticed. It is not the least curious part of the history of the *Cælebogyne*, that male flowers have lately been discovered in New Holland, unquestionably of the same species.

Prof. Gasparini, of Naples, has more recently communicated to the scientific meeting held in that city in 1845, his observations and experiments on the cultivated fig, which, though entirely destitute of male flowers, produced seeds having a perfectly developed embryo, independent of fecundation; access to the pollen of the wild fig, generally supposed to be carried by insects, being, in his experiments, prevented by the early and complete shutting up of the only channel in the fig by which it could be introduced.

An elaborate memoir has very recently appeared in the Transactions of the Linnean Society, by the late Mr. W. Griffiths, "on the Structure and Affinities of Plants Parasitical on Roots." These singular productions have been regarded by several distinguished botanists as forming one natural class

which they have called *Rhizanthea*. Mr. Griffiths, on the other hand, who was eminently qualified, both as a systematic and physiological botanist, to judge of such a question, has adopted the opposite view taken by other observers, namely, that these plants really belong to several distinct, and not even nearly related, families; the points of internal structure and external appearance, which they have in common, arising from the peculiar mode in which they receive their nourishment.

There is no stronger or more deeply rooted popular belief, than that of the effect of the moon upon the changes of the weather. The most careful experiments have been made lately, to ascertain whether there is any ground for believing the moon's attraction to act upon the atmosphere. These have resulted in establishing, beyond a doubt, the existence of *tides in the air*, as well as in the water, which surround the earth.

The doctrine of the influence of the moon and of the sun on the tides was no sooner established, than it became eminently probable that an influence exerted so strongly upon a fluid so heavy as water, could not but have the lighter and all but imponderable fluid of air under its grasp. I speak not of the influence attributed to the moon in the popular language and belief of nations ancient and modern —of Western Europe and of Central Asia, in respect to disease; but of the direct and measurable influence of the moon and of the sun in respect to the air. It is now clear, as the result of the observations at St. Helena by my friend Col. Sabine, that as on the waters, so on the atmosphere, there is a corresponding influence exerted by the same causes. There are tides in the air as in the sea; the extent is of course determinable only by the most careful observations with the most delicate instruments; since the minuteness of the effect, both in itself and in comparison with the disturbances which are occasioned in the equilibrium of the atmosphere from other causes, must always present great difficulty in the way of ascertaining the truth—and had, in fact, till Col. Sabine's researches, prevented any decisive testimony of the fact being obtained by direct observation. But the hourly observations of the barometer made for some years past at the Meteorological and Magnetical Observatory at St. Helena, have now placed beyond a doubt the existence of a lunar atmospheric tide. It appears that in each day the barometer at St. Helena stands, on an average, four thousandths of an inch higher at the two periods when the moon is on the meridian above or below the pole, than when she is six hours distant from the meridian on either side; the progression between the maximum and minimum being moreover continuous and uninterrupted :—thus furnishing a new element in the attainment of physical truth; and, to quote the expression of a distinguished foreigner now present, which he uttered in my own house when the subject was mentioned, "we are thus making astronomical observations with the barometer"—that is, we are reasoning from the position of the mercury in a barometer, which we can touch, as to the position of the heavenly bodies which, unseen by us, are influencing its visible fall and rise. "It is no exaggeration to say," and here I use the words of my friend, the Rev. Dr. Robinson,—"that we could even, if our satellite were incapable of reflecting light, have determined its existence, nay, more, have approximated to its eccentricity and period."

I am unwilling to quit this subject without expressing my deep sense of the services rendered to science by the patient, laborious, unobtrusive observation and researches of my eminent friend, Col. Sabine, in meteorology, and above all, magnetism, in connection with different and very distant points of the earth: researches undertaken, some of them, before public attention was so generally called to the subject as it has been in later years—(since the British Association urged the importance of such investigation upon the government at home;) and undertaken at great sacrifice of domestic comfort, and at the risk of life, not in the ordinary duties of his noble profession, but in the pursuit of science for its own sake—science, one year at the North Pole, and the next, I think, in Sierra Leone. The reputation thus acquired does not come quickly, but it comes surely; and will survive permanently; and the reputation of the individual adds to the reputation of his country.

The following remarks on *Astronomy*, alluding to the greatest discovery of the age, will be read with interest by all:

I begin with Astronomy.—The progress of astronomy during the past year has been distinguished by a discovery the most remarkable, perhaps, ever made as the result of pure intellect exercised *before* observation,—and determining *without* observation the existence and force of a planet; which existence and which force were subsequently verified *by* observation. It had previously been considered as the great trial and triumph of dynamical science, to determine the disturbances caused by the mutual action of "the stars in their courses," even when their position and their orbits were fully known; but it has been reserved for these days to reverse the process, and to investigate from the discordance actually observed, the existence and the place of the wondrous stranger which has been silently, since its creation, exerting this mysterious power. It was reserved for these days to track the path and to measure the force which the Creator had given to this hitherto unknown orb among the myriads of the air.

I am aware that Lalande, more than fifty years ago, on two nights—which, if he had pursued the object then first discovered, would have been well distinguished from the rest of the year, and would have added new glory to his own name—did observe what is now fully ascertained to have been the planet Neptune; but though Uranus had just been added to those bright orbs which to mortal eyes for more than two thousand years have been

known to circle our sun, Lalande was observing before Piazzi, Olbers, and Harding, had added Ceres, Pallas, Juno and Vesta to that number, and before by those discoveries it was proved, not only that the planets round the sun had passed the mystic number of seven—since Herschel had confuted that ancient belief—but that others might also remain to reward the patient labors of other observers. He therefore distrusted his own eyes; and preferred to believe that he had been mistaken, rather than that the existence and force of a new planet had been reserved for the discovery of this latter age. What his eyes saw, but what his judgment failed to discriminate and apply, has since become a recognized fact in science.

I will not presume to measure the claims of the two illustrious names of Leverrier and Adams; of him, who, in midnight workings and watchings, discovered the truth in our own country, and of the hardly happier philosopher who was permitted and enabled to be the first, after equal workings and watchings, to proclaim the great reality which his science had prepared and assured him to expect. I will trust myself with only two observations: the one, my earnest hope that the rivalry not merely of the illustrious Leverrier and of my illustrious countryman, Adams, but of the two great nations which they represent, France and England, respectively, may always be confined to pursuits in which victory is without woe, and to studies which enlarge and elevate the mind, and which, if rightly directed, may produce alike glory to God and good to mankind: and the other, my equal hope, that for those (some of whom I trust may now hear me) who employ the same scientific training, and the same laborious industry which have marked the researches of Leverrier and Adams, there may still remain similar triumphs in the yet unpenetrated regions of space; and that—unlike the greater son of a great father—they may not have to mourn that there are no more worlds to be conquered.

It is a remarkable fact, that the seeing of the planet Neptune was effected as suddenly at Berlin by means of one of the star-maps which has proceeded from an association of astronomers chiefly Germans; such maps forming in themselves a sufficient illustration of the value of such associations as our own, by which the labor and the expense—too great, perhaps, for any one individual—are supplied by the combined exertions of many kindred followers of science.

It is another result of the circulation of these star-maps, that a new visitor, a comet, can hardly be within the range of a telescope for a few hours, without his presence being discovered and announced through Europe. Those comets which have been of larger apparent dimensions, or which have continued longer within view, have, in consequence, for more than two thousand years, been observed with more or less accuracy; their orbits have been calculated; and the return of some has been determined with a precision which in past ages exercised the wonder of nations;—but now, improved maps of the heavens, and improved instruments, by which the strangers who pass along those heavens are observed, carry knowledge where conjecture lately dared not to penetrate. It is not that more comets exist, as has sometimes been said, but more are observed.

An Englishman—a subject of this United Kingdom—cannot refer to the enlarged means of astronomical observation enjoyed by the present age, without some allusion to the noble Earl, Lord Rosse, one of the Vice Presidents of this day, who, himself educated amongst us here in Oxford, has devoted large means and untiring labor to the completion of the most wonderful telescope which science, art, and wealth have ever yet combined to perfect; and which the Dean of Ely—a man worthy to praise the work—pronounced to be a rare combination of mechanical, chemical, and mathematical skill and knowledge. Its actual operations have been suspended by a cause not less honorable to Lord Rosse in another character, than the conception and early progress of his great instrument were to him as a man of science. They have been retarded, so far as he himself is concerned, by the more immediate and, I will say, higher duties which, as a magistrate, as a landowner, and as a Christian gentleman, he owed, and has been paying to his neighbors, his tenantry, and his country, during the late awful visitation which has afflicted Ireland. Yet perhaps my noble friend will permit me to say, that while we not only do not blame him—we even praise him cordially for having devoted his time, his mind, and his wealth to those claims which could not be postponed, since they affected the lives of those who in God's providence surrounded him—there were, and there are others, two at least in his own country, and one his most illustrious friend, Dr Robinson, (but I speak without any communication on the subject from that great observer and greater philosopher,) who might have carried on the series of observations which this wonderful telescope alone can effect, and might thus have secured for his own division of the empire, the discovery of the planet Neptune.

The Catalogues of Lacaille and the Histoire Céleste are now before the world; and with the Catalogue of our Association, constitute a series of most important gifts conferred on astronomy. I have already said that I will not presume to measure the relative merits of two eminent individuals; it is as little within my power to measure the value of such gifts to science. That value can be duly appreciated by none but the great masters of this, the greatest of sciences; but I may be permitted to add, that here, also, come into beneficial action, the powers and uses of such an association, which, rising above the mere calculations of pecuniary profit, provides for the few who only are capable of extracting the just benefit from such works, those materials of advancing knowledge which are beyond the reach of individuals.

While the telescope is busy exploring the heavens with such astonishing results, the microscope is no less successfully employed in making new revelations regarding the wonderful laws of the Creator in our own bodies, and those of almost every substance

on the globe. The remarks on the *Physiological Discoveries of* EHRENBERG and others, at the close of the following extract, are the strongest illustrations of this:

In physiology, the most remarkable of the discoveries, or rather improvements of previous discoveries, which the past year has seen, is, perhaps, that connected with the labors of the distinguished Tuscan philosopher, Matteucci; who, on several former occasions, has co-operated with the Association in the sections devoted to the advancement of the physical and physiological sciences. I refer in this instance to his experiments on the generation of electric currents by muscular contraction in the living body. This subject he has continued to pursue; and, by the happy combination of the rigorous methods of physical experiment with the ordinary course of physiological research, Prof. Matteucci has fully established the important fact of the existence of an electrical current—feeble, indeed, and such as could only be made manifest by his own delicate galvanoscope—between the deep and the superficial parts of a muscle. Such electric currents pervade every muscle in every species of animal which has been the subject of experiment; and may therefore, be inferred to be a general phenomena of living bodies. Even after life has been extinguished by violence, these currents continue for a short time; but they cease more speedily in the muscles of the warm-blooded than in those of the cold-blooded animals. The Association will find his own exposition of the physiological action of the electric current in his work, "Leçons sur les Phénomènes Physiques des Corps Vivants," 1847.

The delicate experiments of Matteucci on the Torpedo, agree with those made by our own Faraday (whom I may call doubly our own in this place, where he is a Doctor of our University) upon the *Gymnotus electricus*, in proving that the shocks communicated by those fishes are due to electric currents generated by peculiar electric organs, which owe their most immediate and powerful stimulus to the action of the nerves. In both species of fishes the electricity generated by the action of their peculiar organized batteries—besides its benumbing and stunning effects on living animals—renders the needle magnetic, decomposes chemical compounds, emits the spark, and, in short, exercises all the other known powers of the ordinary electricity developed in inorganic matter, or by the artificial apparatus of the laboratory.

ETHERIZATION, a kindred subject,—one to which deep and natural importance is attached,—may not untitly follow the mention of Prof. Matteucci's investigations.

It is the subject of the influence of the vapor of ether on the human frame—a discovery of the last year, and one the value of which in diminishing human pain has been experienced in countless instances, in every variety of disease, and especially during the performance of trying and often agonizing operations. Several experiments on the tracts and nerve roots appropiated respectively to the functions of sensation and volition, have been resumed and repeated in connexion with this new agency on the nervous system. Messrs. Flourens and Longet have shown that the sensatorial functions are first affected, and are completely, though temporarily, suspended under the operation of the vapor of ether; then the mental or cerebral powers; and finally, the motor and excito-motor forces are abrogated. It would seem that the stimulus of ether applied so largely or continuously as to produce that effect is full of danger—and that weak constitutions are sometimes unable to rally and recover from it; but that when the influence is allowed to extend no further than to the suspension of sensation, the recovery is, as a general rule, complete. It is this remarkable property of ether, which has led to its recent application with such success as may well lead us to thank God, who. in his providence, has directed the eminent physicians and surgeons amongst our brethren in the United States to make this discovery; a discovery which will long place the name of Dr. Charles T. Jackson, its author, among the benefactors of our common nature.

At the same time, much careful observation on the *modus operandi* of this most singular agent, seems still requisite, before a general, systematic, safe, and successful application of it can be established for the relief of suffering humanity. So great, however, is the number of well-recorded instances of its having saved the patient from the pain of a surgical operation without any ill effect in reference to his subsequent recovery, as to make the subject of the influence of the vapor of ether upon the nervous system, and the modification of that influence on different temperaments, one eminently deserving the attention of the physiological section of the British Association.

With regard to the functions of the primary division and parts of the brain itself, there has been of late a happy tendency to substitute observations on the modifications of those parts in the series of the lower animals in the place of experimental mutilations on a single species, in reference to the advancement of cerebral physiology. Experiment is, no doubt, in some instances, indispensable: but we ought ever to rejoice when the same end is attained by comparative anatomy rather than by experimental vivisections; and every true philosopher will concur with my most eminent friend, Professor Owen, in his doubt. (I quote his own words,) "whether nature ever answers so truly when put to the torture, as she does when speaking voluntarily through her own experiments, if we may so call the ablation and addition of parts which comparative anatomy offers to our contemplation."—Owen's Hunterian Lecture, Vertebrata, p. 187.

I was always struck with that passage in the "Life of Sir. W. Jones," in which that great man, who united so many claims to the admiration of mankind, declined to accept the offer of a friend to collect, and in collecting to put to death, a number of insects in the eastern islands, to be transmitted to Calcutta. He did not, of course, deny the value and importance, and, in one sense, the necessity, of forming such collections; but he limited the right of possessing them to those who could *use* them; and he would not have one of those, the wonders of God's animal world, put to death for the mere gratification of his own unscientific cu-

riosity. He quotes the lines of Ferdusi, for which Saadi invokes a blessing on his spirit, and the last of which contains all my own morality in respect to the lower animals :

> 'O spare yon emmet, rich in hoarded grain,
> He lives with pleasure, and he dies with pain.'

I am aware that the doctrine assumed in the first line of the couplet, in reference to a particular insect, is denied by some naturalists ; and that the fact assumed in the last line, in reference to the lower animals, is denied by others. Whatever be the truth as to the first point, I have no more doubt than I have of my own existence, that some of the lower animals feel severe pain : and even if the words of our immortal Shakspeare as to the corporal sufferance of the beetle trod upon be not literally accurate—yet who is entitled to affirm the contrary? This, I think, is clear, that the child who is indulged in mutilating or killing an insect for his own pleasure, has learnt the first lesson of inhumanity to his own species.

In no department of the science of organised bodies, has the progress been greater or more assured than in that which relates to the microscopic structure of the constituent tissues of animal bodies, both in their healthy and in their morbid states ; and this progress is specially marked in this country during the period which has elapsed since the communication to the British Association by Professor Owen, of his researches into the intimate structure of recent and fossil teeth.

The result of these researches having demonstrated the constancy of well-defined and clearly appreciable characters in the dental tissues of each species of animal, (by which characters such species could be determined in many instances, by the examination of a fragment of a tooth,) other observers have been stimulated to pursue the same minute inquiries into the diversities of structure of the tissues of other organs. Such inquiries, for example, have been most ably and successfully pursued by Dr. Carpenter, in reference to the microscopic structure of recent and fossil shells ; and the anatomist, the naturalist, and the palæontologist, are alike indebted to the zeal and the skill of that eminent physiologist ; while, in another sense, all are indebted to the British Association for aiding and stimulating his inquiries, and for the illustrations with which the publication of Dr. Carpenter's Report has been accompanied in the transactions of the Association.

The *hairs* of the different mammalian animals offer to the microscopical anatomist a field of observation as richly and remarkably developed as the *teeth*, which formed the subject of Professor Owen's communication in 1838, and as the external coverings of the testaceous molusca, which formed the subject of Dr. Carpenter's communication in 1846.

The structure of the softer tissues of the animal frame has not been less successfully investigated by microscopic observers. One of the most extraordinary, perhaps, of the recent discoveries by the microscope, is that which is due chiefly to Purkingé and Valentin, and which in this country have been well established by Dr. Sharpey, relative to the important part in the motion of fluids on internal substances, performed by the vibratile action of myriads of extremely minute hairs or cilia which beset those surfaces. These ciliary movements for example, raise the mucus of the windpipe to the throat against gravity. They have been detected in the ventricles of the brain, as well as many other parts.

Microscopic anatomy has been chiefly indebted to Ehrenberg, Remak, and Dr. Martin Barry, for the exposition of the ultimate structure of the nervous and cerebral fibres.

Exact knowledge of the nature of the retina, or the vitreous and crystalline humors, and of other delicate constituents of the organ of vision—the most wonderful of all the organs with which God has entrusted man—has been remarkably advanced by the skilful use of the improved microscopes of the present day. I rejoice that, among the proposed arrangements of the Association at its present meeting, one evening, Tuesday the 29th, will be specially devoted to an exhibition of microscopic objects. The beautiful discoveries of Sir David Brewster, (whom, in this Association, we must always mention as one of our earliest friends and patrons, three times one of our Vice-Presidents,) have been carefully confirmed ; and many interesting varieties have been noticed in the structure of the crystalline lens of the eyes of different species of animals.

The most brilliant result, perhaps, of microscopic anatomical research has been the actual observation of the transit of the blood from the arteries to the veins ; the last fact required—if, indeed, such an expression be allowable— for the full proof of Harvey's doctrine of the circulation of the blood. Malpighi first observed the transit in the large capillaries of the frog's web. It has since been observed in most other tissues, and in many other animals.

No part of the animal body has been the subject of more, or of more successful, researches than the blood itself. The forms and dimensions and diversities of structure characteristic of the colored discs, corpuscles, or blood globules, as they were once termed, in the diffesent classes, orders and genera of animals, have been described, and for the most part accurately depicted ; and through the concurrence of numerous observers, the anatomical knowledge of these minute particles, invisible to the naked eye, has become as exact and precise as the knowledge of the blood vessels themselves, or of any other of the grosser and more conspicuous systems of organs ; and has added,—when we consider how easily the action is deranged, by how many causes it may be diseased or stopped—another to the many proofs that we are fearfully as well as wonderfully made. In surveying how our frame is formed, how sustained, how revived by sleep, one of the most wondrous of all the incidents of our nature, what suffering is produced by any pressure on the lungs, and yet how unconsciously we breathe a million times in health for one in sickness—I cannot but feel that our heavenly Father gave another proof of His essential character, when, in answer to the prayer of Moses, "Shew me thy glory," God answered, "I will cause *all my goodness* to pass before thee."

It has often been said, that it is one of the happiest circumstances for *progress* in this country, that there are few or none of the strongly entrenched old prejudices to contend with among us, that so continually stand in the way of all new inventions abroad. The *magnetic telegraph* is at the present moment a proof of this. Although the principle is well understood in England, at the present moment, and the fact of its daily use over hundreds of miles in the United States, is a matter of public notoriety, there is as yet not a single extended line of telegraphic communication by this means in Great Britain; and it will be observed that the President of the British Association, in his remarks on this subject, is obliged to draw his illustrations from this side of the Atlantic:

The extension of the means of communication by the ELECTRIC TELEGRAPH is yearly facilitating intercourse, almost as rapid as light or as thought, between distant portions of England, and between distant provinces in the vast empire of our Queen.

The last pamphlet which I had in my hand before leaving home yesterday, was a report presented to the Legislative Council and Assembly of New Brunswick, relative to a project for constructing a railway, and with it a line of electro-magnetic telegraph, from Halifax to Quebec.

Distance is time; and when by steam, whether on water or on land, personal communication is facilitated, and when armies can be transported without fatigue in as many hours as days were formerly required, and when orders are conveyed from one extremity of an empire to another almost like a flash of lightning, the facility of governing a large state becomes almost equal to the facility of governing the smallest. I remember, many years ago, in the *Scotsman*, an ingenious and able article showing how England could be governed as easy as Attica under Pericles; and I believe the same conclusion was deduced by William Cobbett from the same illustration.

The system is daily extending. It was, however, in the United States of America that it was first adopted on a great scale, by Prof. Morse in 1844; and it is there that it is now already developed most extensively. Lines for above 1,300 miles are in action, and connect those States with her Majesty's Canadian Provinces; and it is in a course of development so rapid, that, in the words of the report of Mr. Wilkinson, to my distinguished friend, his Excellency Sir W. E. Colebrooke, the governor of New Brunswick, to which I have just adverted, "No schedule of telegraphic lines can now be relied upon for a month in succession, as hundreds of miles may be added in that space of time. So easy of attainment does such a result appear to be, and so lively is the interest felt in its accomplishment, that it is scarcely doubtful that the whole of the populous parts of the United States will, within two or three years, be covered with a telegraphic network like a spider's web, suspending its principal threads upon important points along the seaboard of the Atlantic on one side, and upon similar points along the lake frontier on the other." I am indebted to the same report for another fact, which I think the Association will regard with equal interest. "The confidence in the efficiency of telegraphic communication has now become so established, that the most important commercial transactions daily transpire, by its means, between correspondents several hundred miles apart. Ocular evidence of this was afforded me by a communication a few minutes old, between a merchant in Toronto and his correspondent in New-York, distant about six hundred and thirty-two miles." I am anxious to call your attention to the advantages which other classes also may experience from this mode of communication, as I find it in the same report. When the Hibernia steamer arrived in Boston, in January, 1847, with the news of the scarcity in Great Britain, Ireland, and other parts of Europe, and with heavy orders for agricultural produce, the farmers in the interior of the state of New-York, informed of the state of things by the magnetic telegraph, were thronging the streets of Albany with innumerable team loads of grain almost as quickly after the arrival of the steamer at Boston as the news of that arrival could ordinarily have reached them. I may add, that, irrespectively of all its advantages to the general community, the system appears to give already a fair return of interest to individuals or companies who have invested their capital in its application.

The larger number of the members of this Association have probably already seen in London an exhibition of a patent telegraph, which prints *alphabetical* letters as it works. Mr. Brett, one of the proprietors, obligingly showed it to me; and stated that he hoped to carry it into effect on the greatest scale ever yet imagined on the American continent. Prof. Morse, however, does not acknowledge that this system is susceptible of equality with his *telegraphic* alphabet for the purpose of rapid communication; and he conceives that there is an increased risk of derangement in the mechanism employed.

I cannot refer to the extent of the lines of the electric telegraph in America without an increased feeling of regret that in our own country this great discovery has been so inadequately adopted. So far, at least, as the capital is concerned, the two greatest of our railway companies have not, I believe, yet carried the electric telegraph further from London than to Watford and Slough: an enterprise measured in the United States by hundreds of miles being measured by less than scores in England.

In England, indeed, we have learnt the value of the electric telegraph as a means of police in more than one remarkable case: as a measure of govern-

ment it is not less important;—from the illustration which I have drawn from America, it is equally useful in commerce; but as a measure almost of social intercourse in the discharge of public business, it is not without its uses also. The day before yesterday I had an opportunity of examining the telegraph in the lobby of the House of Commons, by which communications are made to and from some distant committee-room. As a specimen of the information conveyed from the House is the following:—"Committee has permission to sit until five o'clock;" and among the questions sent down from the committee are the following:—"What is before the House?" "Who is speaking? "How long before the House divides?"

FOREIGN NOTICES.

Propagation of Plants for next Season.—The summer garden is now in its glory, and amply repays its possessor for all his expense, labor, and care. Verbenas, Petunias, and other creeping plants, nearly cover the beds; Pelargoniums, Salvias, and Fuchsias have assumed their deep and rich tints, and Dahlias rule over the whole in profuse magnificence. The amateur begins to take breath for awhile, and basks in the paradise himself has created. Weeds are now less luxuriant, and lawns appear to repose in their rich green, sometimes, indeed, too much embrowned by the summer suns. From the present time to the middle of September, this beauty will rather increase than diminish, and the labor demanded will be less than at earlier seasons of the year.

But we must intrude upon this state of repose by the note of warning, and remind the amateur, that if he wishes a repetition of the scene before him next year, he must propagate at once. Many plants should now be well rooted—such as Wallflowers, Pinks, and Carnations; biennials should be sown, and Roses budded. But it is to the propagation of exotic plants, requiring the management of a frame, that I now call attention, and would advise the following mode of treatment:—First, let a gentle hot-bed be made. If you have a spent Melon or Cucumber bed, that will do, if the old dung is mixed, to the depth of a foot, with leaves and mowings of Grass. You may either insert your cuttings in the mould, in the frame, or in pots. The latter plan is preferable on many accounts; the cuttings strike easily against the sides of the pots, and they can be moved more readily. Indeed many things will be best left together in the striking pots until the spring, and consequently they should be grown in a vehicle which can easily be removed. The soil should be fine, yet porous, having a good portion of sand mixed with it.

As a general rule, the cuttings should be wood of this year's growth, having consistency and strength at the part to be inserted in the ground. Pelargoniums strike without any difficulty, and will scarcely fail under the most ordinary management; other plants are more difficult, yielding more easily to damp, wind, &c. Let every cutting be taken off at a joint, and inserted firmly into the soil. If the soil is moist, water need not be applied, except in small portions. It often happens that an excess of water causes a cutting to perish. Skill is shown in keeping the leaves from drooping; for if they do so to any extent they seldom recover their crispness; and every gardener knows that a cutting with half-withered leaves has little chance. Place the pots in the frame as soon as they are filled, and keep them close for a few hours. Attentively watch them; pick off dead leaves, and maintain a gentle heat. By treatment of this kind, and by remembering the different habits of the woody and the succulent varieties, you will accomplish your purpose, and be independent of nurserymen and friends another year. Do not be afraid of having too many; but cut wherever you can without injuring the beauty of your beds. Some are sure to die, and by misfortune many may. Provide an abundance, and then you will be able to do to others as you are often glad they should do to you—give some away.

In looking over the propagating department of the garden at Putteridge, belonging to Col. Sowerby, I was surprised to find that under the hot suns of May, thousands of cuttings just put in did not flag in the least, although they had no shade but the glass. Mr. Fish informed me that this was accomplished by keeping the plants a sufficient distance from the glass. By this simple arrangement the light becomes diffused before it reaches the plants; whereas, if the glass were too near, they would require shading, or be parched up. With these hints, added to his own experience and observation, it is hoped the reader will secure for himself another season of as great beauty and abundance as I presume he is enjoying at the present time.—*H. B. Gardener's Chronicle.*

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Mildew in the Peach Tree.—Without saying anything for or against the curative effects of Chamomile, I may state a circumstance or two which have come under my notice. When in Ireland, some years back, on calling on Mr. Christie, then gardener to the Duke of Leinster, at Carton, he pointed out two peach trees, on an east aspect, which he said for years had been infested with mildew; but, at the suggestion of a friend, he had planted *chamomile* at the base of the wall on which they were trained. At the time I saw them, the trees were as clean as they could be. While at Soham, the Rev. J. Calthrop, of Isleham, an enthusiastic amateur gardener, related an instance to me of a friend who had cleared his peach trees of mildew in the same manner. It is but justice to say, Mr. Calthrop had but little faith in the chamomile, though he could vouch for the disappearance of the disease from his friend's garden. For my own part, to use a familiar phrase, I have always regarded it as an old woman's story,—but I "tell the tale as 'twas told to me." *W. P. Ayres, Ibid.*

DOMESTIC NOTICES.

RAISING MAGNOLIAS FROM SEED—*Dear Sir:* In the May number of the Horticulturist, you gave us a very interesting article on the *Chinese Magnolia*, and in speaking of one in your garden, of which you gave us a portrait, you remark that it last year gave you quite a crop of fine large seeds, from which you hope to raise many plants. Now this is to inquire whether the various kinds of Magnolias, and particularly the *American sorts*, can be successfully cultivated from the seed, and, if so, what is the process? By giving this information through the columns of the Horticulturist, I have no doubt you will gratify many of your readers, who have been as unfortunate as myself.

I have sown the seed of several of the American sorts, particularly *M. acuminata* and *M. macrophylla*, in both the fall and spring, and they have invariably failed, and I have never yet been able to raise a single tree from the seed; and my attempts with the Mountain Ash (*Sorbus aucuparia*,) by seed has been equally *unsuccessful*, never succeeding in a single instance.

Any information that will enable us to cultivate those beautiful trees successfully from the seed, will, I dare say, be gratifying to many of your readers, and will be peculiarly so to your very humble servant. *A Subscriber. Burlington, Iowa, Aug. 5th*, 1847.

[REMARKS.—All the Magnolias which produce seeds may be raised in this way, and we have this year succeeded in growing quite a number of young plants of the Chinese species alluded to. But the young seedlings are very tender and impatient of sun and wind *when just vegetating*, and hence, though occasionally seedlings may be raised successfully in the *open ground*, yet it is so uncertain that experienced cultivators consider it a waste of the seeds to sow them there.

A *certain* mode of raising Magnolias of all kinds from the seeds, is as follows: Gather the seeds as soon as ripe. About the middle of October make some boxes of rough boards, about six inches deep, two feet wide, and three feet long. Fill these boxes to within one inch of the top with good rich sandy loam, and if a third *leaf-mould* (the rich soil in old woods) is added to it it, is still better. Then plant the seeds about two inches apart, and cover them with an inch of soil—this will fill the box to a level with its top, and when the whole is gently pressed down, watered and allowed to settle, it will be depressed from one to two inches. This will allow space for the necessary supply of water.

The winter quarters of these boxes of seeds may be a cellar, if there is no danger of rats. But where many seedlings are grown in this way, it is usual to place a rough board frame, like a common hotbed frame, in any sheltered position. Set the boxes in this, sinking them in the soil to a level with their tops. At the approach of winter cover them six inches deep with very dry leaves that fall from the trees, and cover the frame with the lights, or, if glass is not at hand, boards will do instead. The latter should be removed once or twice in winter in mild rainy weather for a day or two.

When the spring opens, first uncover the frames, and afterwards remove the leaves. The boxes should now be regularly watered, and about the middle of May the seeds will begin to vegetate. As soon as this is perceived, take them out of the frame and place them in a situation, airy, but also shaded from all but the morning and evening sun. The shade should be that on the north side of a fence or building, and not that of trees. Here the boxes must remain all summer, being regularly watered every evening. In this way a fine crop of seedlings may be grown, with scarcely the failure of a single good seed.

In autumn, place the boxes in the cold frame, and treat them precisely as before. The next spring the young seed'ings, which will be found to have made fine large roots, may be transplanted into the nursery rows. The soil should be deep, and if rather damp and full of vegetable matter, the growth will be the more luxuriant.

If "A Subscriber" will pour *boiling water* upon the berries of the Mountain Ash, let it stand for a couple of hours, and then rub out the seeds before planting them, he will be more successful. All the seeds planted (as they should be) in autumn, are much more certain to vegetate in the spring, if the surface of the ground over the drills or beds is covered a couple of inches deep with some light substance, such as old tan, black bog earth, or leaves. This both keeps the soil about the seeds in an uniform state of moisture, and prevents the surface from becoming so hard by the action of the spring rains and winds that the germinating plants cannot burst through it.—ED.]

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MULCHING.—I have this season found by experience the value of *mulching* transplanted trees, as recommended in the *Fruits and Fruit Trees of America*. I planted about 150 trees in an orchard in very good but rather dry soil. They were all planted with equal care, but about one-third of them I *mulched*—i. e. covered the surface of the ground after planting with 6 inches of litter. They all started alike. Among those not *mulched*, I have lost 15, while there has not been a single death among those mulched. Probably they would all have grown had the month of July been cool and moist; but when the hot weather came, many of those not mulched dried off. I consider, from observation this season, that mulching is preferable to watering. Yours. *B. Hudson, N. Y., Aug. 5th*, 1847.

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THE CHINESE PEAR-TREE, (*Pyrus sinensis.*)—This, which in point of foliage we consider the most ornamental of all fruit trees, appears to be rare and little known in this country. It is perfectly hardy, and well deserves a place in all *ornamental plantations*, though its fruit is of no value. Its leaves are two or three times the size of those of the common pear tree, broader, glossy on the up-

per surface, and having somewhat the appearance of those of an evergreen laurel or magnolia. Its blossoms, white, tinted with pink, appear in April. The fruit is apple-shaped, warted and gritty. It is a native of China; where its local name is *Shalee*. It is also called in some English gardens, the *sand pear*, or snow pear.

There is a handsome specimen of this tree at Netherwood, the interesting seat of JAMES LENOX, Esq., Dutchess county, N. Y. It is about 20 feet high, with an elliptical head, and its broad shining foliage renders it a striking object in the pleasure grounds.

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FOOD AND CLIMATE OF THE MAMMOTH.—It has, for some time past, been a subject of speculation among naturalists, how the mammoth, whose structure and inferred habits considerably resemble those of the elephant, could have lived in a climate so far north as his remains are now found.

CUVIER, and other naturalists, proposed as a solution of the difficulty, the theory of sudden revolution on the earth's surface, which changed what was previously a hot zone of climate into one of low temperature, where this immense quadruped was no longer able to exist.

Prof. OWEN, in his *British Foss'l Mammalia*, has, however, we think, conclusively proved that the mammoth was an animal quite differently organized from the existing species of elephants, and entirely fitted to endure a northern winter. The evidence upon which this conclusion is based, is not that drawn from an examination of the skeleton, which would never have satisfactorily demonstrated it; but from the inspection of the entire mammoth found at the mouth of the river Lena, in a complete state of preservation, imbedded in the icy cliffs and frozen soil of that coast. This carcass was so perfect that not only was all the flesh on the bones, in every part, and the brain perfect, but the *skin was covered with hair, and there was a long mane on the neck*. The skin was about half an inch thick, and when stripped from the carcass, weighed so much that ten men found it difficult to carry it a short distance.

The fact that the skin of this gigantic animal was well clothed with hair, and a more careful examination of perfect specimens of its teeth, has led Prof. OWEN to the conclusion that the mammoth was as perfectly fitted as the reindeer and the moose to exist in high northern latitudes.

The greater complexity and dense coating of enamel in the teeth of the mammoth, as compared with those of the elephant, justify us, he thinks, in believing that the former fed not only on the foliage of trees, but that the *branches* of the same formed a large part of his sustenance. He must have been able to masticate perfectly, while his hairy coat fitted him for the temperature of a northern winter.

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RICHARD'S PEAR.—Last spring we received from Syracuse, New-York, scions of a pear under this name, which was represented as a new seedling fruit of very high merit, surpassing in the estimation of some persons there, the *Onondaga Pear*. JAS. R. LAWRENCE, Esq., of that city has just favored us with a fine basket of specimens of this variety. In his letter which accompanies them, he remarks that the variety is not known to any one there; that it is highly esteemed by all who have seen it, and that he is desirous of ascertaining if it is new to us.

We were quite surprised, on opening the basket, to find the Richards' pear was our old and familiar acquaintance, the *Summer Bon Chretien*. There was no mistaking its peculiarly swollen sides, or its lonied sweet flavor. It scarcely looks well to rechristen this ancient and venerable pear, which is supposed to be the *Regalia* of Valerius Cordus; which is so well known in every country in Europe, and which is described in every pomological work of note for the last century and a half! Near the sea-board it has become rather unproductive, and we are glad to find by the specimens we received from Syracuse, that, as we should have supposed, in the fine climate and soil of the interior, this most ancient of pears is still in perfection. But even with the large bonus of regeneration in Western New-York, it must not be allowed to gratify the "Richards" family by dropping its time-honored name of Summer Bon Chretien.

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CHAMPAGNE ON THE OHIO.—By a letter just received from our friend N. Longworth, Esq., Cincinnati, we learn that, by the assistance of an experienced *vigneron* from Europe, he has made from the last season's vintage of Catawba grapes, 6,000 bottles of champagne, which promises to be of superior quality, and will be fit for use next year.

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STRAWBERRIES.—The September number of your interesting periodical contains a communication from WM. R. PRINCE, professedly for the purpose of correcting an alleged mis-statement of Mr. HOVEY, in the August number of his Magazine, with respect to the exhibition of the Long Island Horticultural Society in June last; Mr. Hovey having stated that at such exhibition "Hovey's Seedling received the premium for three quarts, in competition with upwards of thirty other varieties," whereas Mr. Prince alleges, that "*no other kind whatever was offered in competition for the three quart premium*, the thirty varieties being exhibited in small quantities of a pint or less *as a collection*, and a premium was awarded to them;" further—"that the case was similar at the exhibition in New-York, where a premium was also awarded." Now, I would ask, why was no other variety offered in competition for the three quart premium? It is not to be supposed possible that Mr. PRINCE, who claims to be the "Proprietor of the Nurseries at Flushing," which are understood to be very extensive, and have enjoyed some celebrity, (though until the appearance of his advertisement in the two last numbers of the Horticulturist, and in other Journals, it was not known that he had become the proprietor of the whole of them; and who states, in the communication referred to, that "he has above sixty estimable varieties, more than twenty of which would be pronounced superior to the Hovey, *where flavor was considered*," and in his Catalogue, issued three years since, that "the plants occupy an acre of ground;" I repeat that it cannot be conceived *possible*, with such an immense collection,

cultivated *per catalogue* for years, that Mr. PRINCE could not on one day, gather three quarts of any one variety to offer in competition. especially of the "*Crimson Cone*," which, as appears per catalogue of 1844, he has cultivated for more than three years, is so *plentiful* as to have become a market fruit; and per his statement, so far superior to the Seedling. that "the great venders in the New-York market could not sell the latter until the stock of the former was exhausted;" and the inference is irresistible, that he could not produce any variety to compete with Hovey's Seedling in the three important essentials of *flavor, size, and beauty;* hardihood and productiveness, other necessary qualities to constitute "*the best*" strawberry, the judges could not pass upon from the mere inspection of the fruit, and which Hovey's Seedling are well known to possess in an eminent degree. Mr. PRINCE admits the great size and beauty of the Seedling, but states it to be "deficient in flavor;" that he possesses more than twenty varieties superior to it in the latter quality; and wishes it to be inferred, that the quantity required of one variety (3 quarts) alone prevented him from entering into competition for that premium. Again, I ask, whether at each of the exhibitions referred to by Mr. PRINCE, a specific premium was not offered for the best single variety in a considerably less quantity than three quarts—even a half pint?—and whether he obtained such premium? The man who exhibits "so splendid a collection" (of strawberries) as "has never been seen in Europe or America," should be able to put down all competitors by something more to the purpose than his own panygeric. *Primate, Primordian, Charlotte, Eberlein, &c.*, (Mr. PRINCE'S Seedlings.) should ere this have gained many premiums, for their merits are such, according to Mr. PRINCE'S testimony, as to defy all attempts at exceling them. In inquiring "what will be said when those varieties will be sent *in quantities* to our markets," Mr. P. assumes what may never happen, as perhaps some of them may not be sufficiently prolific to be profitable to the market gardener, and others too deficient in flavor to be popular with consumers. It is true Mr. PRINCE was awarded the premium for the *largest collection*, seedlings in endless variety being easily raised; but which are mostly not worth propagating, and not one out of a thousand equal existi g varieties. The *number of varieties* exhibited, therefore, is of little consequence, further than making a display; the important question to the public is, the *quality* of the fruit, a material component part of which, as Mr. PRINCE himself insists, is *flavor;* which, however, cannot well be determined, if the "show cases" containing the fruit are kept *locked*, so that the judges even cannot have access to apply the requisite test, perhaps because it was feared *tasting* might not prove satisfactory, and the *appearance* of the fruit might sell the plants. If the vaunted new seedlings are so superior, it is surprising that Mr. PRINCE has not submitted them specifically to the judgment, and obtained a report of some Horticultural Society, as is usual. Hovey's Seedling is certainly not as high flavored as some other varieties; but taking into consideration its great size, beauty, and uncommon productiveness, if properly cultivated, I esteem it upon the whole the *best variety now known for general culture;* and being "well known throughout the length and breadth of the land," and its high reputation well established, there is no occasion for Mr. HOVEY'S incessant blowing of the trumpet of its fame with every modulation, so that its friends are surfeited with its praise; and the rebuke administered to him by Mr. PRINCE is not amiss—for however valuable "Hovey's Seedling," Mr. H. has himself proclaimed that at least *one other variety* (and there possibly may be more) possesses "very desirable qualities;" and some *other* than the "Boston Pine" may be equally suitable for fertilizing his Seedling. It is manifestly unjust, both to the publishers and their patrons, for commercial gardeners to use the columns of a horticultural periodical as an advertising medium, thereby depriving the former of the compensation to which they are entitled for the insertion of such *advertisements in disguise* in their appropriate place, and the latter of the instruction they would derive from the insertion of valuable matter in the space thus given to subserve the purposes of an individual, and in which those who pay for such space, have little or no interest. *Wm. W. Valk. Flushing, Sept.* 9, 1847.

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NECTARINE VS. PEACH—*Mr. Downing:* Your "Cincinnati friend" has, as you requested, noticed the miracle at Portland, endorsed by you. [see August number] where a tree that produced perfect peaches the last year, was this year covered with a full crop of perfect nectarines. Prodigious! We have greater wonders here:—A gentleman of high standing two weeks since presented some fine plums to our Horticultural Society, which he assured them came from an apricot stone planted in the first instance in a flower pot. I planted, twelve years since, in a small flower pot, three apricot stones, sent me from Mexico, in a triangular form; first cracking the stones. In their place came three forest trees, which I was assured were not natives in this latitude. On reading your note, I wrote to Portland to learn the *facts* in your case. The gentleman "planted four or five trees, *purchased as peach trees*, against a brick wall. He had no knowledge of the nectarine, and presumes there was not one grown in the city. The year before last, one of the trees adjoining the one which changed to a a nectarine, bore five peaches of good size and quality. Last year the tree which now has nectarines, bore two peaches of rich flavor, and was the only tree that bore fruit in his garden last year. He found them on the ground, directly under the tree, and as he was in the habit of examining his trees *daily, and several times a day*, the peaches could not have been long upon the ground. They had escaped his observation on the tree, and *believes* they were hid by the thick foliage. That they *came from the tree, he then and now believes.* All are now in fruit, and all peaches, but the one tree." This evidence is about as strong circumstantial evidence as you have for believing the Boston nectarine was produced from a peach stone. The evidence in these cases, you must admit, is not as strong as in the case of my forest trees from the apricot stone, or the plum, from an apricot in Kentucky, opposite this city. The stone

was carefully planted in a flower pot, in Kentucky, and watched till it bore fruit. I require you to believe both these changes. When assured of your faith, I will believe your Portland witchcraft, as soon as I believe in the two miracles I have related, but not before. Had the transformation taken place in *Salem*, no one could have doubted, as greater wonders transpired there whilst they were still "in the woods." *Your Cincinnati Friend. Cincinnati, August* 25, 1847.

P. S. There are things about Boston as hard to believe.—They there have two varieties of Seedling Strawberries—the one "average 5½ inches in circumference, and the other 4, under ordinary cultivation." There can be no doubt of the fact, for it is stated in their Horticultural paper, and the strawberry committee, by their silence, endorse it. Their climate and soil must be more congenial to this fruit than ours, for with us the fruit will not average the half of that size. Does it with you? It seems strange to me that this fruit should sell so high, and be so scarce in Boston, when so well suited to the climate! I discover, by a late publication, that three of their gardeners, who bring the greatest supply to their market, did not sell more bushels in a year, than one of our gardeners does in a day. Whilst they there command 20 cents per quart, they are sold here for 5 cents.

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THE NECTARINE ONLY A SUB-VARIETY.—*Dear Sir:* In a lot of Seedling Peaches which fruited the past season, *from stones planted by myself*, I had one tree which produced nectarines. Mr. LONGWORTH, of Cincinnati, must not be so faithless! Yours, *John M. Ives. Salem, Mass., Sept.* 13, 1847.

[REMARKS.—Our "Cincinnati friend" will see by the above note from Mr. IVES, that the "miracle" has also occurred in *Salem!* If he will now turn to the *Bon Jardinier*, the standard French work on Horticulture, he will see that there is no such *distinct* fruit as nectarine recognized by the authors of that work. who are the first practical and theoretical gardeners in France. In describing *Peaches* in that work, there are simply two classifications made, viz: *Pêches dureteuses*, (downy peaches—what we call peaches.) and *Pêches lisses* (smooth peaches—what we call nectarines.)—ED.]

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PROTECTING TENDER ROSES.—In your first volume the subject of protecting tender Roses in winter was alluded to, but the *very best method* yet resorted to has not been published, so far as I know, in any periodical or book. It is practiced with wonderful success in this neighborhood, where there are many rose fanciers, especially among the ladies. Its extreme simplicity and economy strongly recommend it. For even the most tender tea roses it is perfect. Collect a number of cedar boughs, and stick them round the bushes, drawing them together into a cone at top, and slightly tying them there. The rose does not want protection from cold in our climate, but the tender kinds must be shielded from sleet and snow, and the cedars do this effectually. This information may save thousands of plants, and cultivators, instead of planting small ones every spring, may acquire large bushes. I have seen the top of a considerable cedar *tree* cut down, and placed over a tender running rose with perfect success. *J. J. Smith. Germantown, near Philadelphia, Sept.* 6, 1847.

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MELONS IN A CLAY SOIL.—Although there is so little difficulty in growing melons in New Jersey and Long Island, that the market gardeners raise them in fields by wagon loads, for the markets of New-York and Philadelphia, yet it is quite a different matter in many parts of New England. More especially is this the case in portions of it, where the soil is rather cold and clayey, as happens to be the fact in my own garden.

This year, for the first time, I have succeeded in getting a most abundant and most excellent crop of that high flavored and delicious musk melon, the "Citron;" and as I am sure there are others in the northern part of the Union who would be glad to arrive at the same result, I hasten to make known my mode for their benefit.

In the first place, as the melon loves a light and sandy soil, and mine is clayey and heavy, I begin by opening a trench in a suitable part of the garden, say fifty feet long, and three feet wide. To this trench I brought two cart loads of *sand*, and two cart loads of manure. These I mixed with the soil, and trenched the whole space of the size I have named about twenty inches deep—leaving it light and friable. This was done about the first of May.

I then sowed the melon seeds in a single drill along the centre of the trenched slip. In order to give them a little additional shelter, bring them forward rather earlier, and protect them from the ravages of the striped bug. I covered them, as soon as planted, with a rough frame, made of four pieces of board, six inches high. The frame is made like a box without a top and bottom, and it is a foot wide; the length of the board say twelve feet, and is covered on the top with millinet, or any cheap cotton stuff—if of the latter it is oiled. This, I find, gives protection enough to bring forward the melons three weeks earlier than if planted without protection; and if the boxes are laid away about the 1st of June, when they are no longer needed, they will last several years.

I have now (August 2d) a plentiful supply for my family from one row of the dimensions named, in soil, too, where I had not previously been able to get melons usually before the last of this month, and the crop a very precarious one then. Yours, *Northampton, Mass., August 2d*, 1847.

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AMMONIACAL LIQUOR FOR MANURE.—Will some one of your chemical correspondents inform a plain unlettered farmer, where he can find 'gas ammoniacal liquor," or a substitute for it? Landreth in his edition of Johnson's Dictionary of Gardening, directs, under the article "Weeds" a *peck* (?) of salt and a gallon of the above, added to a barrow load of weeds, and the whole *immediately* (?) becomes a saponaceous mass. It appears strange to me that Mr. Landreth, knowing, as he must know, that gas ammoniacal liquor is not to be had by one farmer in a thousand in this country, had not ex-

plained or proposed a substitute. In England, where the whole island is lighted with gas, gas liquor can be obtained readily, I suppose. *A Subscriber. New-Bedford, Sept.* 1, 1847.

P. S. It would appear to me that the manure made from a barrow of weeds and a peck of salt, would destroy vegetation entirely by the effect of such a quantity of salt—Would it not? What would be the value of the manure obtained in this way, compared with the cost of salt at 25 cts. per bushel, and a gallon of gas liquor? Perhaps you can suggest some cheaper substitute, or way of obtaining the same result.

[We think, on examining the article in the work referred to, that it is the *English editor's*, and not *Mr. Landreth's* direction; but owing to the plan adopted by the publishers of the American edition, it is impossible to tell who is the author of many articles, or parts of articles, contained in it.

Ammoniacal liquor can only be had at the gas works, in the large cities where gas is manufactured. It is a powerful manure, and requires to be diluted with five or six times its own bulk of water, before using it on grass or other growing crops. It may be transported to any distance in barrels.

A peck of salt and a gallon of this liquor (the latter diluted,) would be sufficient for *four* barrowfuls of weeds, which would then, after decomposition, make a strong manure. If our correspondent will mix his weeds and salt with barnyard manure, and water the heap with urine instead of the gas-liquor, as recommended by Prof. Lindley in our August number, he will find it a process far more economical, and the result equally satisfactory. Ed.]

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Early Joe Apple.—This is certainly a capital summer apple. We saw it repeatedly last season, and we again received specimens the first week in September from Messrs. Elwanger & Barry, Rochester, in fine order; the fruit beautiful in appearance, and the flavor that of the most delicate dessert apple. Messrs. E. & B. remarked, in a note accompanying them and some other varieties, "these specimens of *Early Joe* were picked from an old tree so loaded that you could hardly see a branch or leaf."

The flesh of this variety is peculiarly marked with reddish stains; the form rather flat, beautifully striped with purplish-red on a pale ground. It is yet apparently little known out of Western New-York, but it must soon find its way into general cultivation.

.....

A New Remedy for the Curculio.—*Sir:* I made one of those accidental discoveries this season, which often prove more valuable than the results of a carefully conducted series of experiments.

This is no less than a preventive to the attacks of that most unconquerable enemy to all smooth stone fruit—*the Curculio.*

I have long been so troubled with this insect, that I have considered the plum tree of little value to me.

This season, wishing to stimulate a couple of old plum trees, which stood among others in my fruit garden, I directed my gardener to place round each tree a couple of barrowfuls of fresh horse manure from the stable. This was accordingly laid on the surface of the ground, and as work was rather pressing at the time, it was suffered, though rather strong in ammonia, to lie thus for a fortnight. I think it was put about the trees just as the fruit began to swell, and before it became as large as peas. The result is, that these two trees are bearing a good crop of fruit, while every other plum tree in my garden has, as usual, been stung, and dropped all its fruit. There were no punctures, or scarcely any, to be found on the fruits of these two trees.

I understand from this, that the pungent fumes of the fresh stable manure, are so offensive to the curculio, that it avoids the trees under which it is placed. If this, on repetition, proves to be the case, we have, I think, a weapon against the depredator; for though the effect of the application is not the most agreeable one in a neat fruit or kitchen garden, yet no one would hesitate to resort to it, annually, if the curculio can be driven away by such means. Yours. *A Subscriber. Philadelphia, Aug.* 10, 1847.

[This is interesting, and we have some corroborative evidence. This season being one when insects of all kinds are unusually abundant, we have ourselves suffered somewhat from the attacks of the curculio, though not to such an extent as to prevent our having a moderate crop of plums, apricots, etc. But we observed some time ago, with some surprise, that upon a couple of large nectarine trees, growing directly against a fence which shuts in our stable yard, not a single fruit was punctured by the curculio, though other nectarine trees, sixty or eighty feet distant, did not escape. We attributed it at the time to the fumes from the litter thrown daily into the yard. Since our correspondent's experience, which is more direct, would appear to confirm the opinion, it will, as he suggests, be well to make a more extensive trial of the effect of a direct application next season.—Ed.]

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Coloured Edition of Fruits.—The coloured edition of your work on Fruits, so anxiously looked for, is slow in making its appearance. When does it come out? Please answer in the Horticulturist, for the benefit of others as well as myself. Respectfully yours. *C. S. Wilson. Utica, N. Y. Sept.* 11, 1847.

[The delay is caused by our desire to have the plates executed as perfectly as possible. With this view we sent them to Paris to be coloured there. On receiving them, we found that although in the main beautifully executed, yet a few varieties were so indifferently coloured, that we could not consent to mar the work by inserting them. These were, therefore, obliged to be sent again to be *retouched.* Hence the great delay; but we hope to be able to announce the issue of the work complete in a few weeks more.—Ed.]

.....

Bees.—Will some of your correspondents, who have had experience in the matter, give me some practical information on the following subjects:—

1st. What are the best hives for keeping bees in? 2d. Is an apiary better placed in the midst of a garden, or in farm-like fields surrounded by woods? Yours, *A Constant Reader.*

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COMMERCIAL GARDENING AT THE SOUTH.—We publish the following letter entire, (contrary to our usual practice with correspondence so complimentary to ourselves,) that those of our readers interested may judge of the spirit which leads the writer to encourage horticulture at the *South*, where we are obliged to say there has for a long time been a most extraordinary apathy on all branches of tasteful rural improvement, considering the wealth and intelligence of many of the southern people.

Within the past year, we have received several private letters of similar tenor, regarding the want of several large nursery establishments at the south, conducted in a thorough and vigorous manner. Undoubtedly there are thousands of persons there who would buy and plant the finest fruit and ornamental trees, if they were more acquainted with their value and beauty; and this kind of knowledge is in no way better promoted, than by the presence of extensive nurseries in their midst. As we have no interest in any nursery establishments here, we trust some of our readers who are, and who may be inclined to enter into Mr. FISH'S views, will correspond with him on the subject.—ED.

A. J. DOWNING, ESQ.—*Dear Sir:* Being a great friend and ardent admirer of horticulture in general, I have read your works upon the "Fruits and Fruit Trees of America," and "Rural Architecture and Landscape Gardening," with the highest interest and pleasure. I am happy in the conviction that the lethargy which has so long possessed us of the south, in these matters, is now being thrown off. A spirit of improvement is rapidly gaining ground in our midst, and horticulture and all its kindred arts, so long neglected, are beginning to receive that consideration which they so justly deserve. Suffer me to say, sir, that such works as yours, of which I have just spoken, have done more to arouse this spirit, to excite this consideration, than all other influences together. Believing this, and at the same time, being deeply impressed with the great influence which Horticulture and its kindred arts and graces, must exercise in increasing the happiness as well as prosperity of man, I cannot with withhold my humble tribute of thanks for the publication of your highly valuable books. Although a stranger, I have been anxious to add my humble testimony to the high consideration and attention which these works are now receiving even at the south; and to the happy reformation which they are mainly instrumental in working, in a part of our great country, which till recently had greatly negleeted the interesting subjects of which they so fully and ably treat.

However, I do not know, sir, that I should have intruded this communication upon you, but from the desire to speak of one other matter, and, if possible, to solict your aid. I have mentioned the spirit of improvement—the great interest in Horticulture, &c., which you have mainly aided to excite; but this spirit—this interest, receives a great check from the fact that there are no extensive *Nurseries* and commercial gardens at the south, or at least accessible to us from which we can procure such Fruits, Flowers, Shrubbery, &c., as may be desired. This is unquestionably felt as a sore inconvenience. Many at the south are deterred from sending to the north for their things, because the cost of transportation, and other expenses connected therewith, especially when the orders are not large, would be very considerable. Besides, there is a danger of being imposed upon by nurserymen and gardeners, where orders are sent to them to be filled—and again, there is great danger that the precious package of good things, being long on the way, may be received in a very unsound condition. I am well aware, our people are generally much averse to sending orders for fruits, flowers, &c., and would invariably patronise home gardens and nurseries if we had them here. It is truly strange to me, sir, that some of your enterprising nurserymen or gardeners, at the north, have not long since come to the south and established gardens and nurseries, or that some of your establishments, north, have not got up branch nurseries here. This is a matter of which I have thought not a little, and I am anxious to see an extensive garden and nursery in Georgia; and I would suggest Macon, the place of my residence, as possessing altogether more advantages in this respect than any other city or town in the State. It is therefore for the establishment at this place of an extensive nursery, &c., that I would respectfully solicit your aid and influence, if you could in any way give it without inconvenience or trouble to yourself. It is needless for me to say that such an establishment at a central, accessible place at the south, would give a great impetus to Horticulture, &c. I suggest Macon as a highly advantageous location for a garden, nursery, &c., because we have here a genial climate, and almost every variety of soil. Any kind of soil or situation can be had in our suburbs, and at very low prices. Macon is also a very central place at the south, and very accessible. We have long lines of railroads running in various directions, and other lines still to be constructed; besides we have a river navigable for six or eight months of the year. These railroads make us, and will make us, very accessible to every part of Georgia, North and South Carolina, Tennessee, Kentucky, Alabama, Mississippi, and Florida. Fruit trees, flowers, shrubbery, &c., could and would be sent, not only to the cities, but to every part of the State.

It may be urged that nurseries and gardens should be near *large* cities. It is true, we have but a population of about 7,000 in Macon, but we have a good deal of wealth here, and the demand for fruits, flowers, &c., would be considerable. But communicating as we do, with every part of the Southern country, and having a direct trade with a large part (and the wealthiest part) of Georgia, the great demand would come from these various parts and sections of the South.

It would require but little capital very little, to establish a nursery, &c. here, as the ground would cost but little; and if the nurseryman did not wish to purchase, he could find numbers, as owners of the soil, who would be glad to furnish the land, and put it in as stock, in an establishment of the kind.

So convinced am I of the success of a nursery here, that I would most gladly render *to any experienced and competent person* any aid in my power. There is not the least doubt that an experienced and honest commercial gardner would meet with the highest success to engage in his business among us. I have mentioned some of the advantages; we are also connected with Savannah, Charleston, and other cities of the South. I will mention the fact (which is of course known to you) that all the varieties of fruits succeed very well at the South generally. Though some sorts do better in some parts of our country than in others. I will also remark that on account of our southern climate, vegetation grows so rapidly that the nurseryman would be rewarded for his labor in grafting, budding, &c., in half the time that is required at the North. Trees grafted and budded, would be large enough for market the second year, and many even the first year.

I have taken the liberty to trouble you with this long communication, as I know you are deeply interested in these matters. You may not now be connected with a nursery, (I learn that you are not,) but will you do me the favor, sir, to hand this communication to some one who might be induced to come South, or to make such disposition of it, as might best secure the object I desire; that is, the establishment of a nursery at Macon. Perhaps some of the many establishments of the kind at the North, might be influenced to start a branch of their business here.

I would be most happy to correspond with any one, seeking further information on this subject. Should any person desire to know the precise nature of the different kinds of soil, or the price of land, or any other facts, I will cheerfully communicate this, or any other information.

As erroneous opinions often prevail at the North, with regard to the health of the South; I would here take occasion to say, that Macon is remarkable for health. They need not fear fevers, or any other Southern diseases here.

In conclusion, I beg to say, that I have made this communication much longer than was intended. Nothing but an ardent desire to see Horticulture more prosperous at the South, would have induced me to pen it. And knowing that there was no gentlemen in our whole Union who felt a greater interest in these matters, or who could take a more intelligent view of the suggestions I here offer, than yourself, I have concluded, though a stranger, to intrude this upon your patience.

If, sir, you can give any direction to this, which may further the objects of the writer, you will certainly confer a lasting favor upon your obedient servant, GEO. W. FISH. *Macon, Geo., Sept.* 10, 1847.

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NEW-YORK HORTICULTURAL EXHIBITION.—We were present at the show of the American Agricultural Association in Broadway on the 8th of September. The exhibition was a very respectable one for a Society yet in its infancy, compared with those of Philadelphia and Boston; but it has not as yet by any means gathered all the horticultural strength of the metropolis and its surroundings.

Among the articles more especially worthy of notice, were the unrivalled Newtown pippins of Pelham farm; the Dahlias of DUNLAP & CARMAN; the Roses of BOLL & MANTEL; the charming *basket bouquets* of S. T. JONES; and some exceedingly beautiful and large specimens of Donyer's Victoria Plum, raised under glass, from Mr. HALSEY, of Astoria. The collection of fruits was not large; but the vinery grapes, from various contributors, were exceedingly good specimens. We have not been furnished with a report by the recording secretary in time for this number, but will notice it in our next.

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NEW-YORK STATE AG. SOCIETY.—*Horticultural Department.*—The preparations for the Horticultural exhibition at Saratoga, were superior, beautiful as they have heretofore been, to those of any former Fair, and reflected high credit upon the good taste of Dr. THOMPSON, under whose direction the erections were made. The exhibition, except perhaps in Flowers, was not equal to some previous ones. Expecting to have received the report of the committees, we did not take the notes necessary to enable us to do justice to the contributors, and must therefore refer to these reports, which we shall publish next month.

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THE ROCKINGHAM HORT. SOCIETY held its first exhibition at Portsmouth, N. H., on the 15th September. Though this Society had been but a fortnight in existence, the show was large, and gave evidence of far more attention to Horticulture in that vicinity than had been supposed to exist. The show of Fruits was particularly fine. In the evening an address was delivered by Rev. Dr. BURROUGHS, which is spoken of in the highest terms.

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UTICA HORTICULTURAL EXHIBITION.—This exhibition took place on the 7th Sept. at Mechanic's Hall. The report of the committee on vegetables notices with great satisfaction the growing interest manifested in this department of Horticulture, as evinced by the fine display of vegetables at the exhibition. In the discharge of the special duty assigned them, they reported, and the Society awarded, various premiums on Fruit, Vegetables and Flowers. Premiums were awarded on Plums to Messrs. J. R. Warner and C. S. Wilson; Pears, J. C. Hastings, of Clinton; Apples, T. H. Hubbard; Peaches, Mrs. Cyrus Clark; Melons, C. E. Goodrich; Grapes, S. D. Childs; also for Peaches, to Messrs. A. Munson, L. Lawrence, J. Vanderheyden, and W. Mervin; Apples, W. D. Walcott, Yorkville; and Plums, N. Devereaux. To Charles Spratt, on Egg Plants and Sweet Corn. To the Lunatic Asylum, on Lima Beans; W. A. Richardson, on Tomatoes; Richard Harter, on Potatoes; and Charles Spratt and George S. Dana, on the best lot of Vegetables. For Flowers, premiums were awarded to Mrs. Anson Thomas, Mrs. S. D. Childs, F. W. Boice, Mrs. W. Tracy, Mrs. W. D. Walcott, C. D. Balis, and Mr. Howard. We do not undertake to condense the comments of the report, upon the several varieties. It is perhaps enough to say that where all deserved so well, the committee, in discriminating, have praised, and doubtless justly praised, the whole. In conclusion we would remark that these exhibitions attract

great interest, and are certainly advancing the Horticultural prospects of this part of the State. *Utica Observer.*

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EXHIBITION OF THE HORTICULTURAL SOCIETY OF MONTREAL.—The first annual exhibition of this Society took place on the 7th of September. The *Montreal Gazette* speaks of it as a "splendid exhibition, which in some points would have been creditable to any of the older established societies of either England or America." This is certainly gratifying information to receive in regard to the condition of Horticulture in a region which many look upon as too cold and ungenial for the successful culture of fruits. Premiums were awarded for Plums, Peaches, Pears, Grapes, grown both under glass and in open culture; Melons of the Minorca, Cantaloupe, and other varieties; also for many kinds of flowers, bouquets, and many floral designs. There appears to have been an excellent show of vegetables, including nearly all of the usual culinary kinds, as well as the new and rarer sorts. Premiums were also given on birds, including pigeons, canaries, &c., of which there was a large display.

ALBANY AND RENSSELAER HORTICULTURAL SOCIETY.

THE first annual exhibition of this Society took place on the 11th of September, at the State Geological Rooms, State-street, Albany, and was every thing that its most ardent friends could wish.

It is not yet six months since the Society was formed; and of course no opportunity has been afforded for increasing the varieties, or extending the cultivation of the various articles exhibited, and yet the show of fruit, flowers, and vegetables, astonished and delighted every beholder. A more beautiful, a more extensive horticultural exhibition has seldom or ever been witnessed in this State.

The undersigned congratulates the friends and supporters of the Society upon the entire success of this their first annual exhibition; and trusts, that this encouraging and satisfactory result will induce them to farther and continued exertions, for the prosperity and welfare of the Society.

JOEL RATHBONE, *President.*

FRUITS.—The committee on Fruits report that there were exhibited by R. H. Vail of Ida Farm, Troy, eleven varieties of *Apples*, viz., Holland Pippin, Early Tart Bough, Heart's Pippin, Jersey Sweeting, Early Sweet Bough, Spitzenbergh, R. I. Greening, Dominie, Vandervere, Swaar, and one variety not named. Three varieties of *Pears*—Bartlett, Beurre Rans, and Catillac. Seven varieties of *Plums*—Coe's Golden Drop, Flushing Gage, Reine Claude, Yellow Egg, Imperial Gage, Yellow Gage, and a seedling of a fair character. One variety of *Peach*—Red Magdalen Three varieties of *Grapes*—Isabella, Winne, and a native blue variety

By D Benson of Albany: *Pears*—Beurre Diel. *Plums*—Washington Bolmar, Royal Purple and Nectarine; and a very fine seedling Peach.

By Wm. Newcomb: *Watermelons*—three varieties. *Musk melons*—three varieties

By E. P. Prentice, Mount Hope, Albany: *Peaches*—very beautiful specimens of Bergen Yellow. *Musk and Water Melons*—one variety of each.

By John Gott, Albany: *Peaches*—a limb bearing thirty beautiful peaches not named. *Plums*—Green Gage, and a seedling.

By Stephen E. Warren, Troy: Seven varieties of *Peaches*—Noblesse, Royal George, Patroon, Sweetwater, Lemon Cling, Red Magdalen, and a seedling. Three varieties of *Nectarines*—Perkins' Seedling, Red Roman, and one not labelled

By Bradford R. Wood, Albany: Five varieties of *Plums*—Red Magnum Bonum, Sweet Gage, Green Gage, Washington, and Bolmar. *Peaches*—beautiful Rareripe.

By Wm. Buswell, Troy: *Peaches*—Coolidge's Favorite. *Plums*—Washington, and a Seedling

By D. B. Kirtland: *Apples*—Hawthornden. *Musk Melons*—Netted.

By J. Mc D. McIntyre, Albany: *Plums*—Egg. *Apples*—one variety not named

By Dr. Jas McNaughton, Albany: *Peaches*—Rareripe and Morris White, very fine.

By V. P. Douw, Greenbush: *Pears*—Beurre Diel. *Plums*—Royal Blue, a seedling Green, and a seedling Yellow *Grapes*—Miller's Burgundy. *Water Melons*—Black Spanish, Joppa, Rio Janeiro and Mountain Spanish. *Musk Melons*—Netted.

By Joel Rathbone, Kenwood, Albany connty: *Plums*—Green Gage, and Blue Gage. *Peaches*—Royal George, Sweetwater and Morris White. *Pears*—Seckel. *Grapes*—Catawba and Isabella. *Nectarines*—Newington. *Water Melons*—Rock Nutmeg, and Large Long Island.

By Isaac Denniston, Albany: Twenty-seven varieties of *Plums*—Bleecker Gage, Yellow Gage, Denniston's Superb, Reine Claude, Columbia, Albany Beauty, Eleanor, Yellow Egg, Lawrence's Favorite, Chancellor Gage, Denniston's Red, Bleecker's Red. Blue Gage, Buel's Favorite, Green Gage, Washington Bolmar, Mirabelle, and ten seedlings not named.

By Amos Briggs, Scaghticoke, Rensselaer county: Sixteen varieties of *Plums*—Nectarine, Orange, Orleans, Prince's Yellow Gage, Reine Claude, Coe's Golden Drop, Blue Gage, French Red Gage, Imperial Gage, Washington Bolmar, Yellow Gage, Purple Magnum Bonum, and four seedlings of fine appearance, but not of first quality. *Pears*—Bartlett, Seckel, and one variety not named. *Apples*—one variety not labelled.

By Jas. Wilson, Albany: Six varieties of *Pears*—Althorpe Crassanne, Doyenne Gris, Doyenne White, Beurre Capiaumont, Henry the Fourth and Lewis. *Apples*—Reinette Van Mons. *Plums*—Bleecker's Red, St. Catharine, Wheat and Judson. *Currants*—May's Victoria.

By John Taylor, Albany: *Apples*—two varieties not labelled. *Grapes*—Sweetwater and French Cluster.

By James Coates: *Plums*—Red Magnum Bonum, and Quackenbush. *Apples*—Alexander. *Water Melons*—two varieties

By L Menand: *Strawberries*—White Alpine.

By J. K. Paige, Albany: Six varieties of *Pears*—Seckel, Bartlett, and four varieties not named. *Peaches*—five varieties. *Grapes*—sixteen varieties. *Plums*—thirteen varieties. *Water Melons*—Valparaiso.

By Dr. A. March, Albany: *Plums*—Very beautiful specimens of Red Magnum Bonum and Yellow Egg.

By Dr. Herman Wendell, Albany: Nineteen varieties of *Pears*—Duchess d'Angouleme, Seckel, Gansell's Bergamot, Napoleon, Beurre Knox, Muscadine, Easter Beurre, Beurre Diel, Bartlett, Doyenne White, Leon le Clerc of Van Mons, Compte de Lamy, Fulton, Summer St Germain, Chaumontelle, Duchess de Mars, and three varieties unnamed. Twenty varieties of *Apples*—Newtown Pippin, Green, Rambo, Baldwin, Esopus Spitzenbergh, Yellow Newtown Pippin, Male Carle, Lady Apple, Gloria Mundi or Ox Apple, Gravenstein, Lemon Pippin, Golden Sweet, Fall Pippin, Vandervere, Rhode Island Greening, Hawthornden, Ribston Pippin, Seek-no-further, Siberian Crab, and two varieties not named. Twenty-five varieties of *Plums*—Coe's Golden Drop, Coe's Late Red, Yellow Egg, Red Magnum Bonum, White Perdrigon, Virgin, Peters' Large Yellow, Prune d'Agen, White Magnum Bonum, Lombard, or Bleecker's Red, Long Scarlet, Catherine Plum, American Wheat Plum, Bleecker's Gage, Schuyler's Gage, Washington Bolmar, Yellow Gage, Blue Gage, Nectarine, Reine Claude, Prince's Imperial Gage, Holland Plum, two English varieties, labels lost, and one seedling from the Lombard, resembling that variety. *Grapes*—Golden Chasselas, Bland's Virginia and Isabella. *Nectarines*—Red Roman. Six varieties of *Peaches*—Early Anne, Early Tillotson, Emperor of Russia, and three seedlings. *Water Melons*—Black Spanish and Valparaiso. *Musk Melons*—Beechwood, Sweet Ispahan, Christiana, Green Citron, and early yellow Canteloup.

By J. Townsend, Albany: *Apples*—five varieties not named.

AWARD OF PREMIUMS.

The Committee have awarded the premiums as follows:

Apples—For the best exhibition, to Dr. Herman Wendell of Albany, $3

For the second best exhibition, to Henry Vail, of Ida Farm, Troy, $2

Pears—For the best exhibition, to Dr Herman Wendell of Albany, $3

For the second best exhibition, to James Wilson of Albany, $2

Plums—For the best exhibition, to Isaac Deniston, of Albany, $3.

For the second best exhibition, to Dr. Herman Wendall, of Albany, $2.

Peaches—For the best exhibition to Stephen E. Warren, of Troy, $3.

For the second best exhibition, to John Keyes Paige, of Albany, $2.

Grapes—For the best exhibition of native grapes, to Henry Vail, of Troy, $3.

For the best specimens and greatest variety of foreign grapes, to John K. Paige, of Albany, $3.

Nectarines—For the best exhibition, to Stephen E. Warren, of Troy, $3.

Water Melons—For the best specimens, to V. P. Douw, of of Greenbush, $2.

For the second best specimens, to Joel Rathbone, of Kenwood. Albany, $1.

Musk Melons—For the best specimens, to Dr. Herman Wendell, of Albany, $2.

For the second best specimens, to V. P. Douw of Greenbush. $1

The Committee beg leave to notice favorably, and as the best specimens of the particular varieties named, some Coe's Golden Drop and Nectarine Plums, exhibited by Mr. Amos Briggs of Schaghticoke; and some very large and beautiful Bergen Yellow Peaches, exhibited by E. P. Prentice of Mt. Hope, Albany county; also a few beautiful specimens of Apples, Peaches, Plums, and a very beautiful new seedling Pear, called the Sterling Pear, exhibited by Messrs. Wilson, Thorburn and Teller, from their nursery.

V. P. Douw, Greenbush, Wm. Buswell Troy,
David Benson, Albany, *Committee.*

FLORAL DESIGNS, VASE BOUQUETS, &c.—The Committee on Floral Designs, Bouquets, &c., report that there were presented for exhibition more than twenty designs, bouquets, etc, nearly all of which were very beautiful, and reflected great credit for skill and taste on the part of the exhibitors.

Mr. Dingwall of Watervliet, exhibited a beautiful design in candelabrum form, five feet high, composed of choice and rare flowers, surmounted with a very elegant bouquet of green-house flowers, to which the Committee awarded the first premium of $3.

Mr. Henry Vail, of Troy, exhibited an elegantly arranged design, three feet high, of antique form, composed of choice flowers, to which they have awarded the second premium of $2.

Mr. Joel Rathbone, of Kenwood, exhibited a beautiful Egyptian design, four feet high, composed of choice Dahlias, Roses, Verbenas, and other flowers, arranged with great skill and good taste.

Mrs. D. T. Vail, of Ida Farm, exhibited a design in pyramidal form, composed of beautiful flowers, with a cypress vine gracefully twined around its base, and arranged with exquisite taste throughout.

Mrs Charles H. Merrit, of Troy, exhibited a floral temple, its columns and entablature covered with green moss, its base studded with delicate flowers on a moss ground, and the apex of its roof surmounted by a beautifully arranged bouquet of rare flowers.

Dr. Herman Wendell exhibited, not for competition, a design in pyramidal form, four feet high, composed of choice flowers of numerous varieties.

L. Menand exhibited a very splendid oval shaped floral ornament for a dinner table, arranged in a china basket with great taste and skill, composed of the choicest and rarest green-house flowers, such as Stephanotus floribundus, Ericas, Crassulas, Drosmas, Fuchsias, Heliotropes, Geraniums, etc., to which the Committee awarded a premium of $3.

Mr. Dingwall exhibited a pair of beautifully arranged vase bouquets, composed of choice flowers, to which the premium is awarded of $3.

Mr. Wilson exhibited a pair of vase bouquets arranged with taste and skill.

Mr. Wilson exhibited a pair of flat mantel bouquets, arranged tastefully with choice flowers, to which the premium is awarded of $2.

Mrs. Charles H. Merrit, exhibited a basket bouquet, most beautifully arranged with rare flowers, its body and handle covered with moss, studded with rare and delicate flowers, to which the premium is awarded of $2.

Mrs. Merritt also exhibited a beautiful basket bouquet, without a handle, arranged with skill and taste.

Mr. Wilson, an exquisitely designed pair of bouquets, one flat and one round, composed of the choicest and rarest flowers, and arranged with consummate skill, to which the first premium is awarded of $2.

Mr. Menand also presented a beautifully arranged pair, designed with his usual pure taste and great skill, to which the second premium is awarded of $1.

Herman Wendell, Abel French,
Wm. Newcomb, *Committee.*

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GREEN-HOUSE PLANTS AND FLOWERS.—The Committee on Green-house Plants and Flowers, report that there was exhibited by L. Menand the following named green-house plants in pots—all of very beautiful appearance, and indicating great skill in their culture, viz:—Ericas: multiflora, transparens, clarida, umbellata, gracilis, cruenta, and phylicoides; Rochea falcata, and Physianthus alba.

By James Wilson—Seventy varieties of Dahlias for the display premium, twelve varieties for the 12 dissimilar bloom premiums, and one variety for the specimen bloom premium; six varieties of Noisette Roses, ten varieties of Perpetual Roses, fifteen varieties of Bourbon Roses, twenty-four varieties of Verbenas, several Seedling Verbenas, splendid double German Asters and Seedling Phloxes. Mr. W. not having handed in a list of the names of his flowers, the committee cannot report them, under the rule, more in extenso.

By Dr. Herman Wendell—Twenty-two varieties of Dahlias, viz:—Admiral Stopford, Orb, Sylph, Striata, Lees' Bloomsbury, Cleopatra, Arethusa, Oakley's Surprise, Madam Walmer, Pontiac, Oddity, Duke of York, La Tour D'Auvergne, Madame Chauverii, Nigra et Alba, Sir Stuart Richardson, Harlequin, Bragg's Antagonist, Viscount Ressigneur, Dowager Lady Cooper, and Illuminator. Twenty-five varieties of Verbenas, including six seedlings; also, Lusette, Polkii, Eclipse, Caroline, Dove-eye, Roseum, Rosy-cluster, Monk's Purple, Dwarf White, and others of newer varieties. Eighteen varieties of new and beautiful Phloxes, most of them never exhibited before this society, viz:—Charles, Rosea superba, Nymphœa alba, Auguste, Grandissima nova, Princess Marianne, Decussata alba, Mazeppa, Fleur de Marie, Almerine, Breckii, Lawrencii, Eclipse, Dodonœa, Anais Chauviere, Norfolkii, and two Seedlings. Eight varieties of Roses, viz:—Dr. Rogers, Hermosa, Gen'l. Dubourgh, Madam Laffay, Prince Albert, Old Tea, Calvertia, and LaReine. Also a beautiful collection of Phlox Drummondii, arranged on a ground of Rose Geranium.

By Henry Vail, of Troy—Twelve varieties of new and beautiful Dahlias. Mr. V. did not hand a list to committee.

By J Dingwall—Thirty-four varieties of Verbenas, twenty-five varieties of choice and beautiful Dahlias, a large collection of beautiful German Asters, tastefully arranged in a tray, and twenty-five varieties of Seedling Verbenas, several of which were very fine. Mr. D. has not rendered a complete list to the society.

By Wm. Newcomb, of Pittstown—Seventy-three varieties of Dahlias, viz:—Cinderella, Golden Souvenir, Lutea Speciosa, Arethusa, Ithuriel, Great Mogul, Illuminator, Standard of Perfection, Hero of Stonehenge, Antler, Marchioness of Ormond, Sir Stuart Richardson, Eugenia, Mark Antony, Alice Hawthorne, Duke of York, Great Western, Desdemona, Beeswing, Cleopatra, Constantia, Theodore, Sir Henry Fletcher, Lord Lyndhurst, Viscount Ressigneur, Favorite, Marshal Soult, Prince of Orange, Charles 12th, Harden's Bride, Bridesmaid, Lutea Grandiflora, Maroon, Argo, Exquisite, Essex, Triumph, Dowager Lady Cooper, Crowbridge's Perfection, Hero of Tippecanoe, McKensie's Perfection. Mrs. Wilkinson, L'Magnificent, Scarlet Perfection, Lord Liverpool, Rose Unique, Rose Superior, Striata. Mrs. Rushton, Mrs. Shelly, Unique, Admiral Stopford, Blandina, Indian Queen, Widnall's Queen, Miss Jones, Antagonist, Primrose, Alba Purpurea, Prince Albert, Mary, Conductor, Conservative, Sir R. Sale, Grandis, Julia; and Seedlings, Clarence, Mrs. Newcomb, William, Annette, Eliza, Simon, and President Polk. And the following varieties of annual and other

class flowers, viz:—Twelve varieties of Verbenas, Pink and White Musk Plant, Pink and White Lavatera, Feverfew, Schizanthus, several vases of Tagetes, Erysimum peroffskianum, twenty varieties of Zinneas, variety Euphorbia, 4 varieties of Petunias, Phlox Drummondii, White and Gold Eternal Flower, Silenes in varieties, Reseda odorata, Delphinium, Double Balsams, Ageratum, Didiscus cerulea; Coreopsis, Scabious, Calceolarias, Cypress Vine, Escholtzias, Portulaca, Lathyrus odorata, Tropeolum, Dolichos purpurea, Mathiola annua, Centaurea americana, Helianthus, 2 varieties, Anagallis indica, Mesembryanthemum chrystalinum, Coix lachryma, Hibiscus africanus, Glaucium luteum, Godetia, Globe amaranthus—two varieties—Adonis minata, Celosia cristata and lutea, Dianthus annuus, Clarkea, 2 varieties; Commelina, Cellestris, Delphinium peren. Thymus pyramidalis, Lonicera, Southernwood, Snowberry, Mock Sensitive, and a very beautiful exhibition of Quilled and Double German Asters, arranged in good taste on a moss ground, in heart shape.

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PREMIUMS.—The committee have awarded the premiums as follows:

For the best exhibition of greenhouse plants to L. Menand of Watervliet	$3 00
For the best exhibition of Dahlias to James Wilson of Albany	3 00
For the 12 best dissimilar blooms to James Wilson of Albany,	2 00
For the 2d best 12 dissimilar blooms to Henry Vail of Troy,	1 00
For the best six varieties of Roses to James Wilson,	2 00
For the 2d best six varieties of Roses to Dr. Herman Wendell,	1 00
For the best six varieties of Phloxes to Dr. Herman Wendell	2 00
For the 2d best six varieties of Phloxes to James Wilson,	1 00
For the best seedling Phlox to James Wilson	1 00
For the best display of German Asters to Mr. Newcomb of Pittstown,	2 00
For the 2d best display of German Asters to James Wilson,	1 00
For the most extensive and best exhibition of Verbenas to J. Dingwall of Watervliet,	2 00
For the 2d most extensive and best exhibition of Verbenas to James Wilson,	1 00
For the best seedling Verbena, J. Dingwall,	1 00
For 12 seedling Dahlias, discretionary premium to Mr. Newcomb,	2 00
This being the time to award premiums for the season, the committee award for the best and most extensive exhibitions of Annual, Biennial and Perennial flowers during the season, to Mr. Newcomb	3 00
For the best and greatest display of Phloxes during the season to Dr. Herman Wendell,	2 00

The committee beg leave to notice with commendation a large and beautiful exhibition of new and rare, as well as splendid, Dahlias sent to the exhibition by J. M. Thorburn & Co., New-York, for which they return the thanks of the society to Messrs. T. & Co.

WM. NEWCOMB, *Chairman*,
JOSEPH CALDWELL,
JOHN DINGWALL,
WM. BUTTERCASE,
Committee.

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VEGETABLES.—The committee on vegetables report that there were exhibited by E. P. Prentice, of Mount Hope near Albany—Sweet Corn, Carrots, Parsnips, Beets, Salsify, Egg Plants, Red Cabbage, White Cabbage, Lima Beans, String Beans, six varieties of Tomatoes, four varieties of Rhubarb, Yellow Marrow Squashes, Summer Garden Crookneck Squashes, and Red Peppers.

By Joel Rathbone, of Kenwood near Albany—Dwarf Early York Cabbage, Drumhead Cabbage, Blood Beets, White Carrots, Yellow Altringham Carrots, Early Purple Carrots, Early Horn Carrots, Long Orange Carrots, Curled Savoy Cabbage, Egg Tomatoes, Yellow Tomatoes, small red and large red Tomatoes, Lima Beans, Dutch Marrow Peas, Okra, Case Knife Beans, Marrow Squash, White Manchester Solid Celery, Sugar Beets, Sage, Mint, Sweet Marjorum, Purple Egg Plants, Salsify, Parsnips, Sweet Corn and four varieties of Onions.

By J. Roeslie, of Albany—White Onions, Red Onions, Yellow Onions, White Strap Leaf Turnips, White, Black and Yellow Radishes, Bergen Cabbage, Sweet Winter Parsnips, Pot-herbs, Peach Tomatoes, Yellow Tomatoes, Red Tomatose, Grape Tomatoes, Sweet Corn, and beautiful white large Giant Celery.

By John Townsend of Albany—Two varieties of Squashes, two varieties of Carrots, Corn, White Onions, Turnip Beets, Red Cabbage, and Nutmeg Squashes.

By Wm. Newcomb of Pittstown—Twelve Bassano Beets, Blood Beets, Sugar Beets, Salsify Roots, Blood Carrots, Altringham Carrots, White Spined Parsnips, Red, White and Silver Skin Onions, six clusters of Martinias, eight varieties of Squashes, viz: Summer Yellow, Summer Scallop, Valparaiso, Mammoth, Sugar, Crookneck, Yellow Mammoth, and Acorn Squashes; Long Cucumbers, Sweet Corn, Ohio Corn, Pop Corn.

By Dr. Herman Wendell of Albany—Altringham Carrots, Red, White, and Yellow Onions, Parsnips, Nine varieties of Potatoes, viz: Onderdonk's Seedling, Long Pink Eye, Early June, Shaw's Early, Mercers, Carter's, Staffold Hall, Merinos, and Ross' Early; Turnip Beets, Blood Beets, Drumhead Cabbages, Martin's Crooknecked Squashes, Martinias and Seymour's White Solid Celery.

By V. P. Douw of Greenbush—Blood Beets, Orange Carrots, Parsnips, Red Tomatoes, Salsify, Brocoli, Marrow Squash, Celery, Drumhead Cabbage, Egg Plants, Butter Beans, Lima Beans, Refugee Beans, White Onions, and Asparagus Beans.

By Henry Vail of Troy—White Solid Celery, Salsify, Blood Beets, and four varieties of Egg Plants.

By Dr. Fairfield of Troy—Delusion Squash, kept since October, 1846.

PREMIUMS.—The committee have awarded the premiums as follows:

For the best six Squashes, to E. P. Prentice, of Mount Hope,	$2 00
For the best 12 Blood Beets, to V. P Douw, of Greenbush	2 00
For the best 12 Carrots, to Joel Rathbone, Kenwood, near Albany,	2 00
For the best 12 Parsnips to E. P. Prentice,	2 00
For the best 12 roots of Salsify, to Henry Vail, of Ida Farm, Troy,	2 00
For the best pair of Egg Plants, to Joel Rathbone,	2 00
For the best 6 heads of Cabbage, to Herman Wendell, Albany,	2 00
For the best 6 heads of Red Cabbage, to E. P Prentice,	2 00
For the best 3 heads of Brocoli, to V. P Douw,	2 00
For the best half peck of Tomatoes, to Joel Rathbone,	2 00
For the best 6 heads of Celery, to T. Roeslie, of Albany	2 00
For the best half dozen Martinias, to Wm. Newcomb, of Pittstown.	2 00
For the best display of Vegetables, to E. P. Prentice,	3 00

D. B. KIRTLAND,
ROBERT HARPER,
JOHN SLOANE,
Committee.

Albany, Sept, 11th, 1847.

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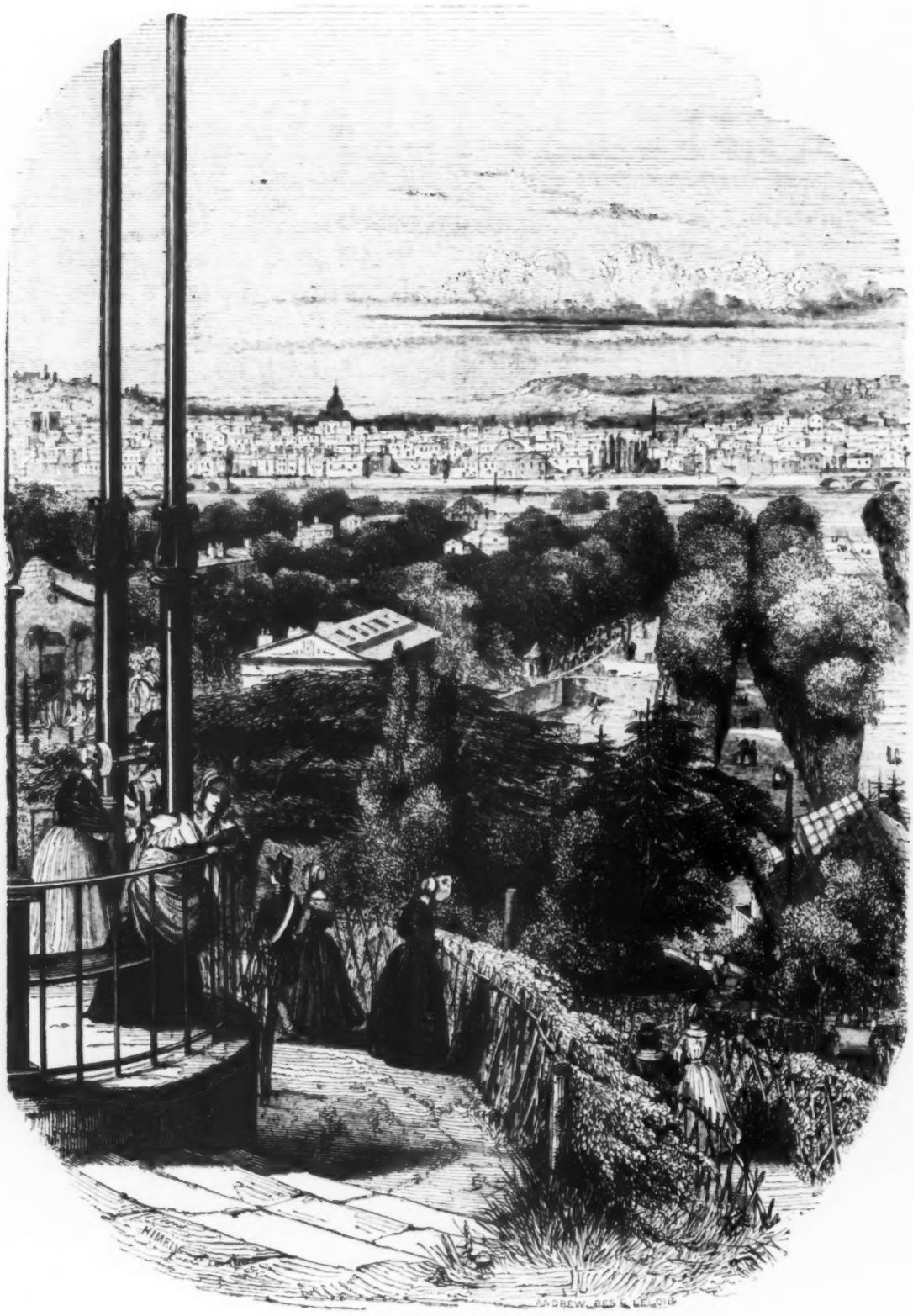

VIEW OF THE JARDIN DES PLANTES. [Hort: Nov. 1847.]